

INOV 26 1980

PRELIMINARY

FOR INFORMATION ONLY NOT A CONTROLLED DOCUMENT

OUTSTANDING ECNs

UNLESS OTHERWISE SPECIFIED DO NOT SCALE DIMENSIONS ARE IN INCHES DRAWING TOLERANCES ON: ANGLES = ±10 DRAWN BY $x = \pm 1$ DATE $.xx = \pm .03$ SURFACE FINISH / .xxx = ± .005 CHECKED MATERIAL: DRAWING ENGINEER California. ther receipt right in, or any design PROJECT ENGINEER FINISH: right to reor manufacnanufacture o reproduce of unless by MFG ENGINEER m the cor-



Atari, Inc. 1265 Borregas Avenue Sunnyvale, Calif. 94086

A Warner Communications Company

TITLE

SIZE

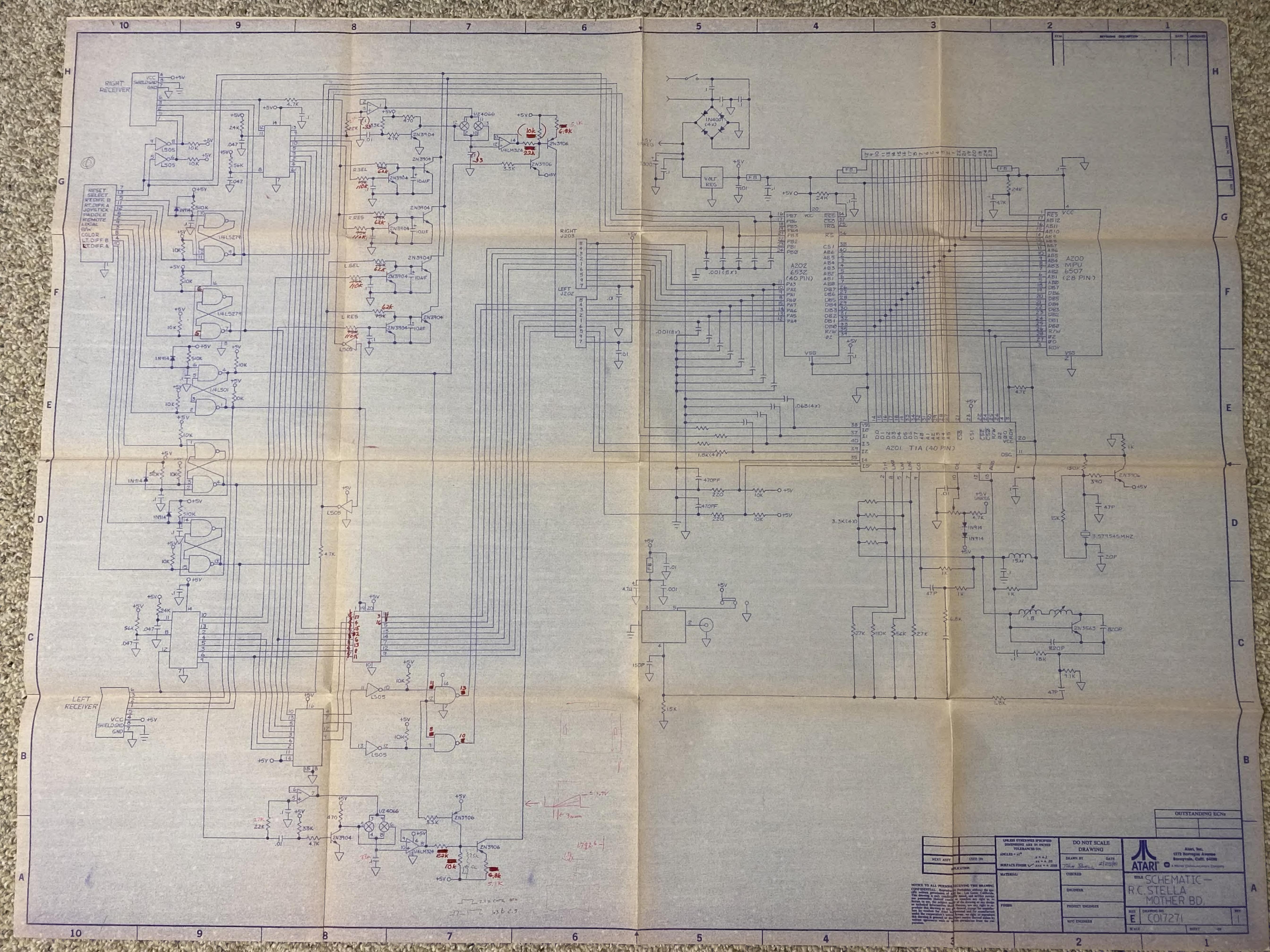
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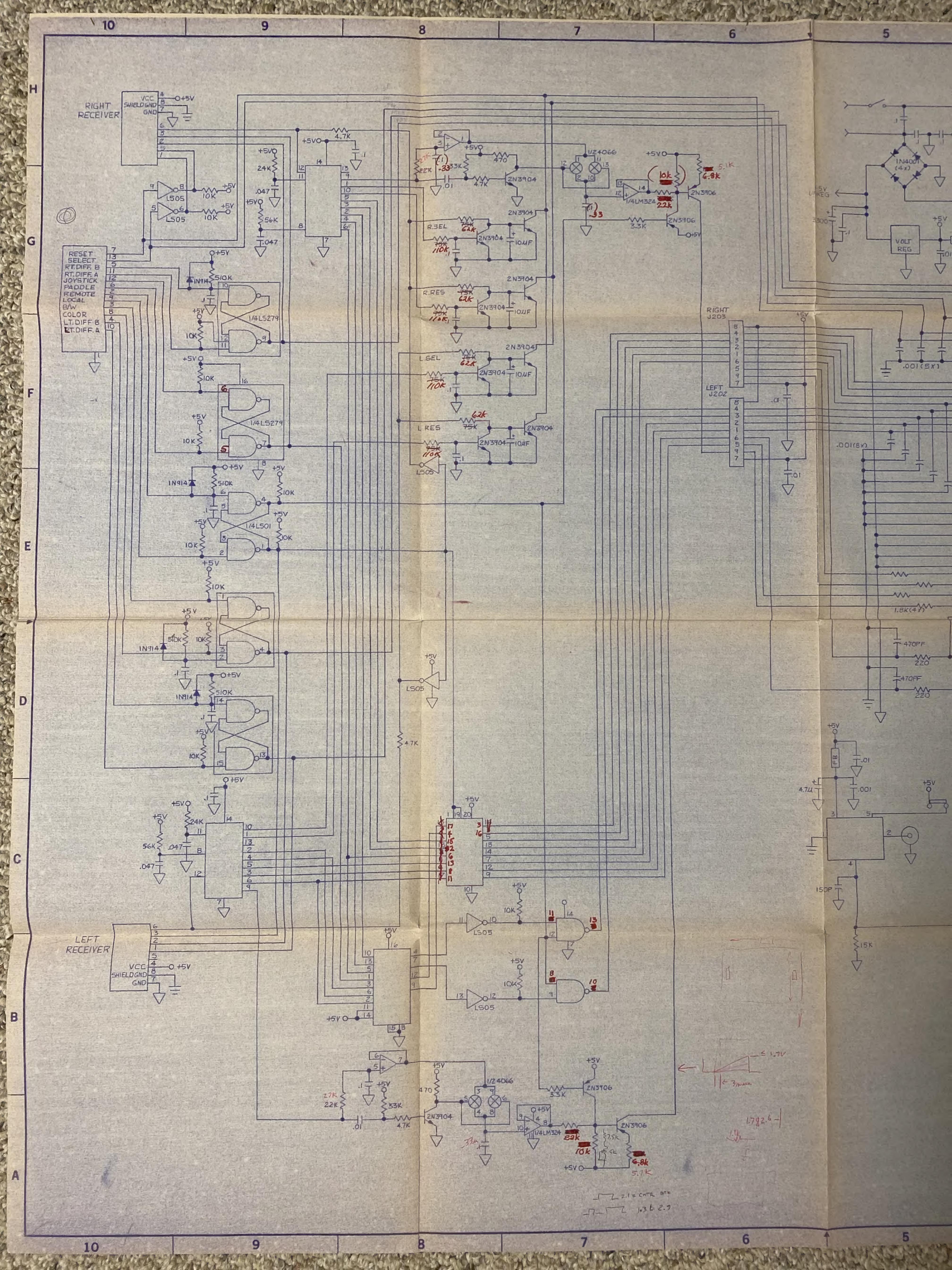
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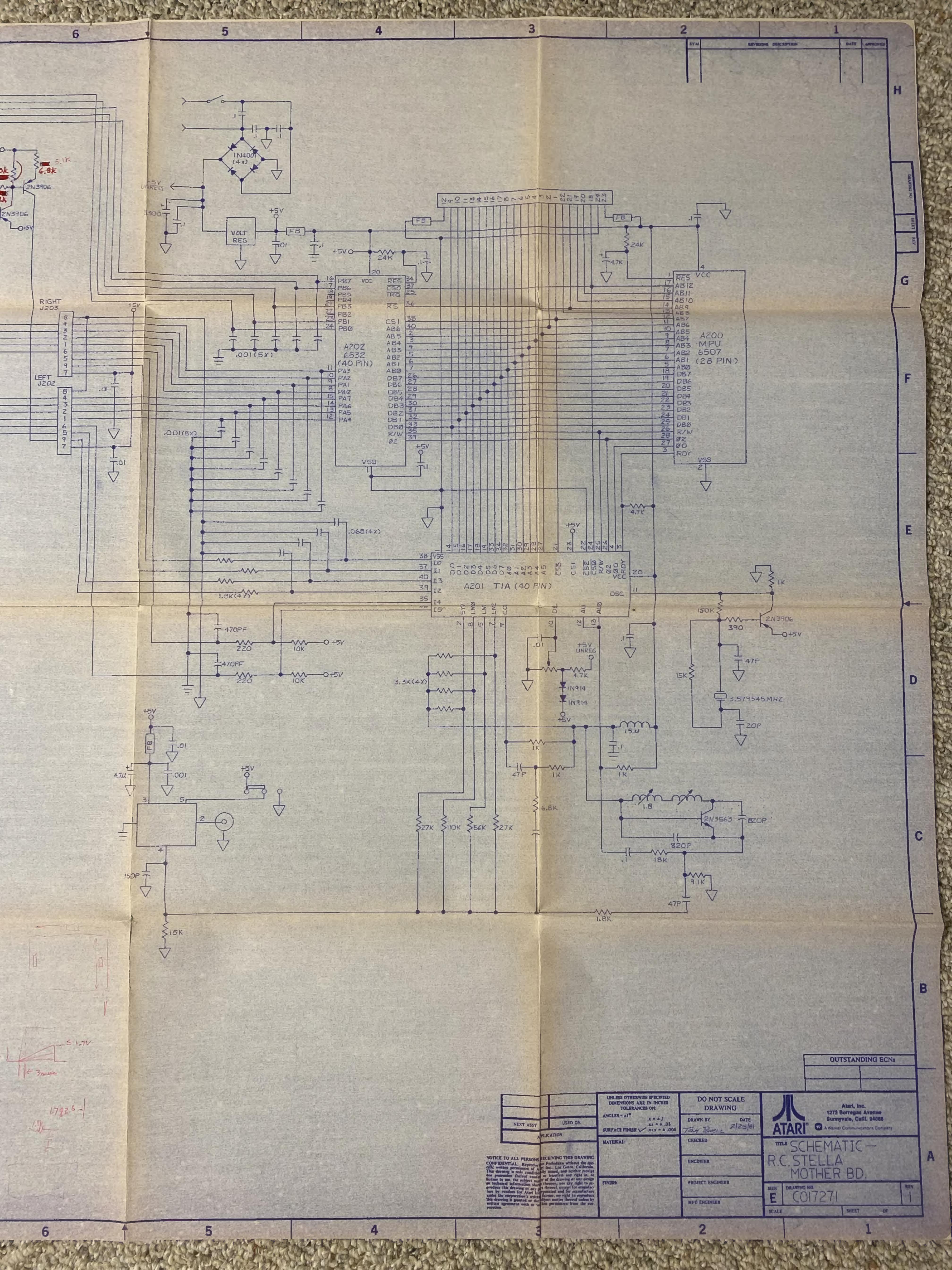
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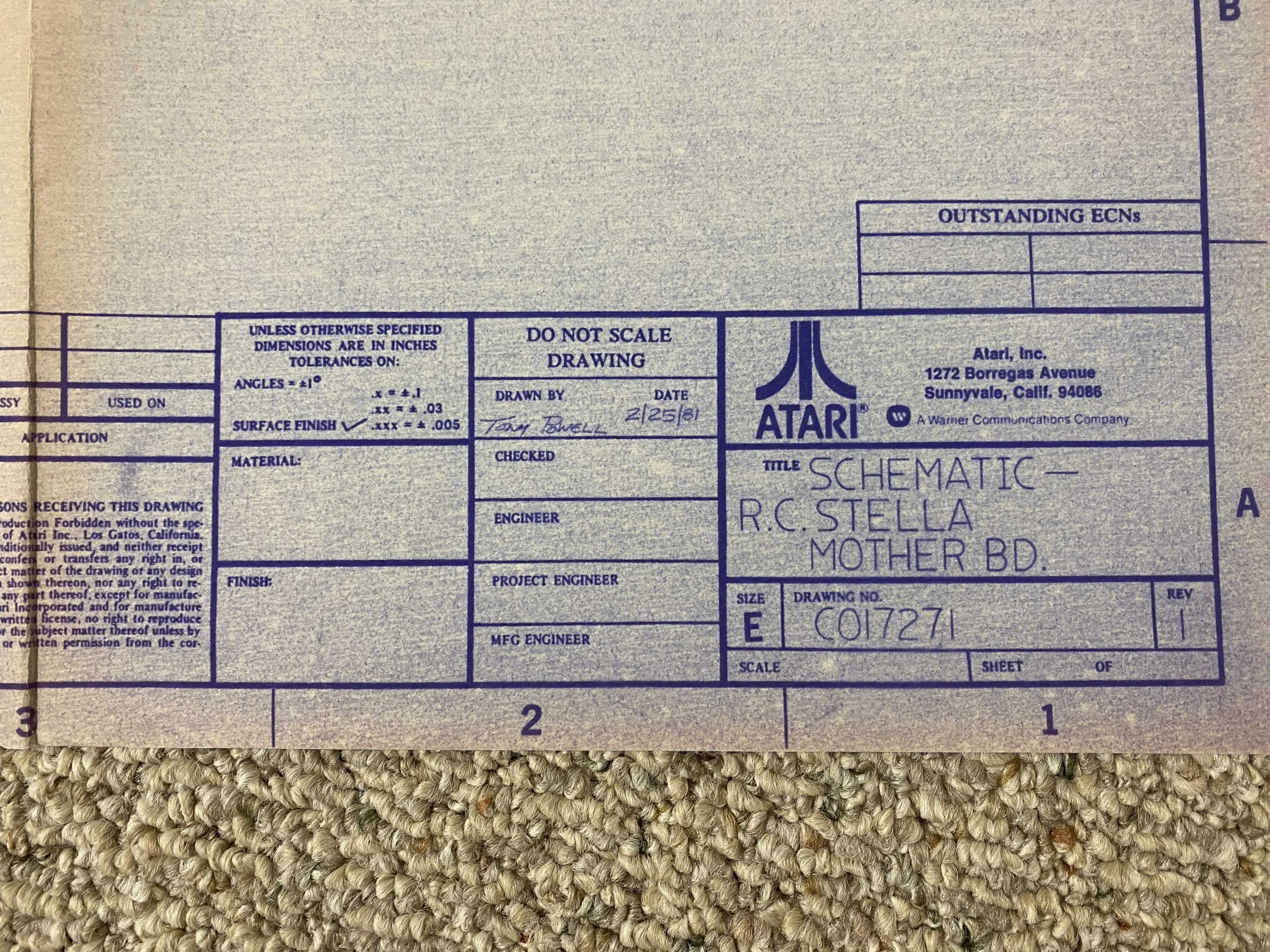
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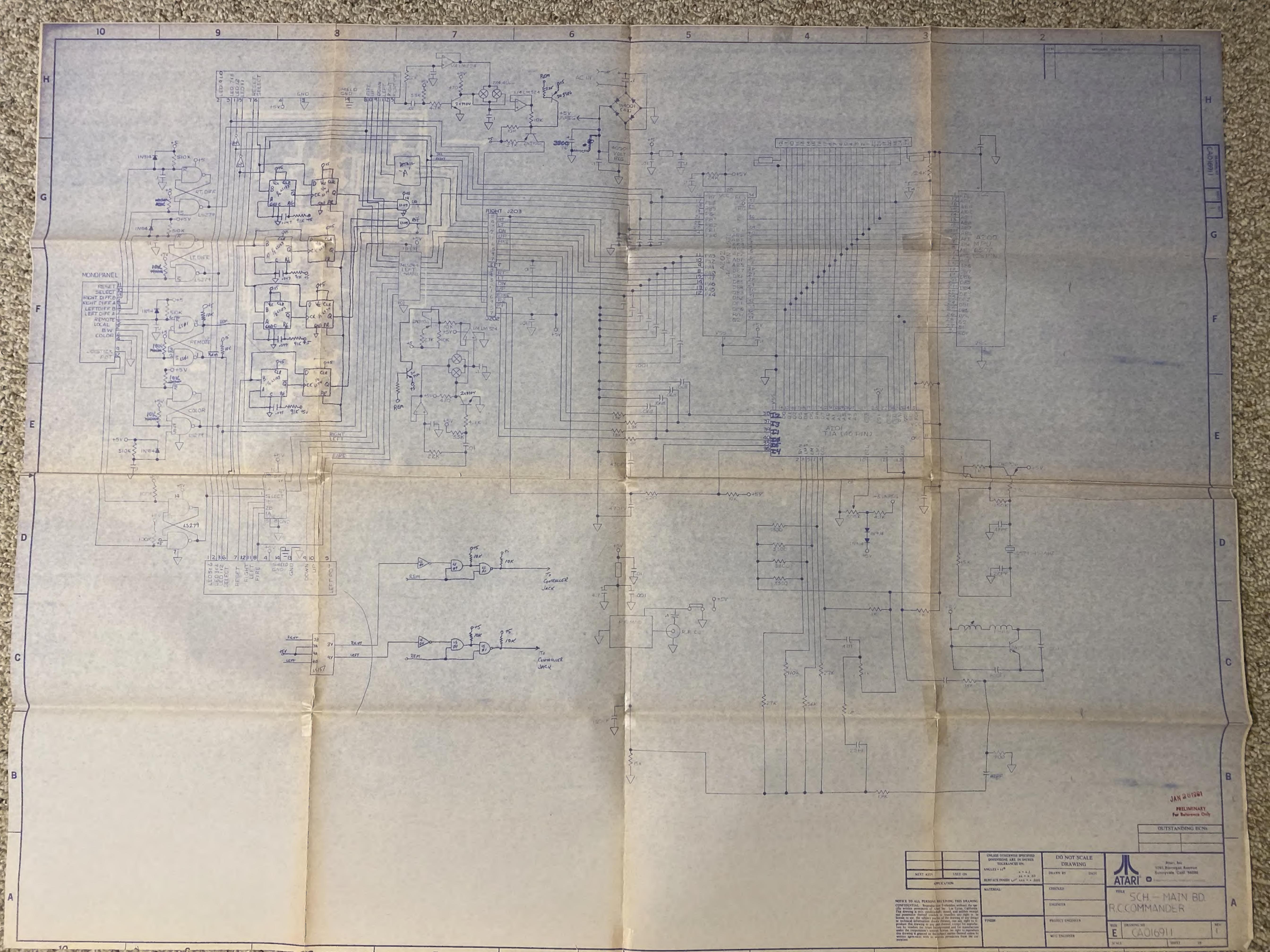
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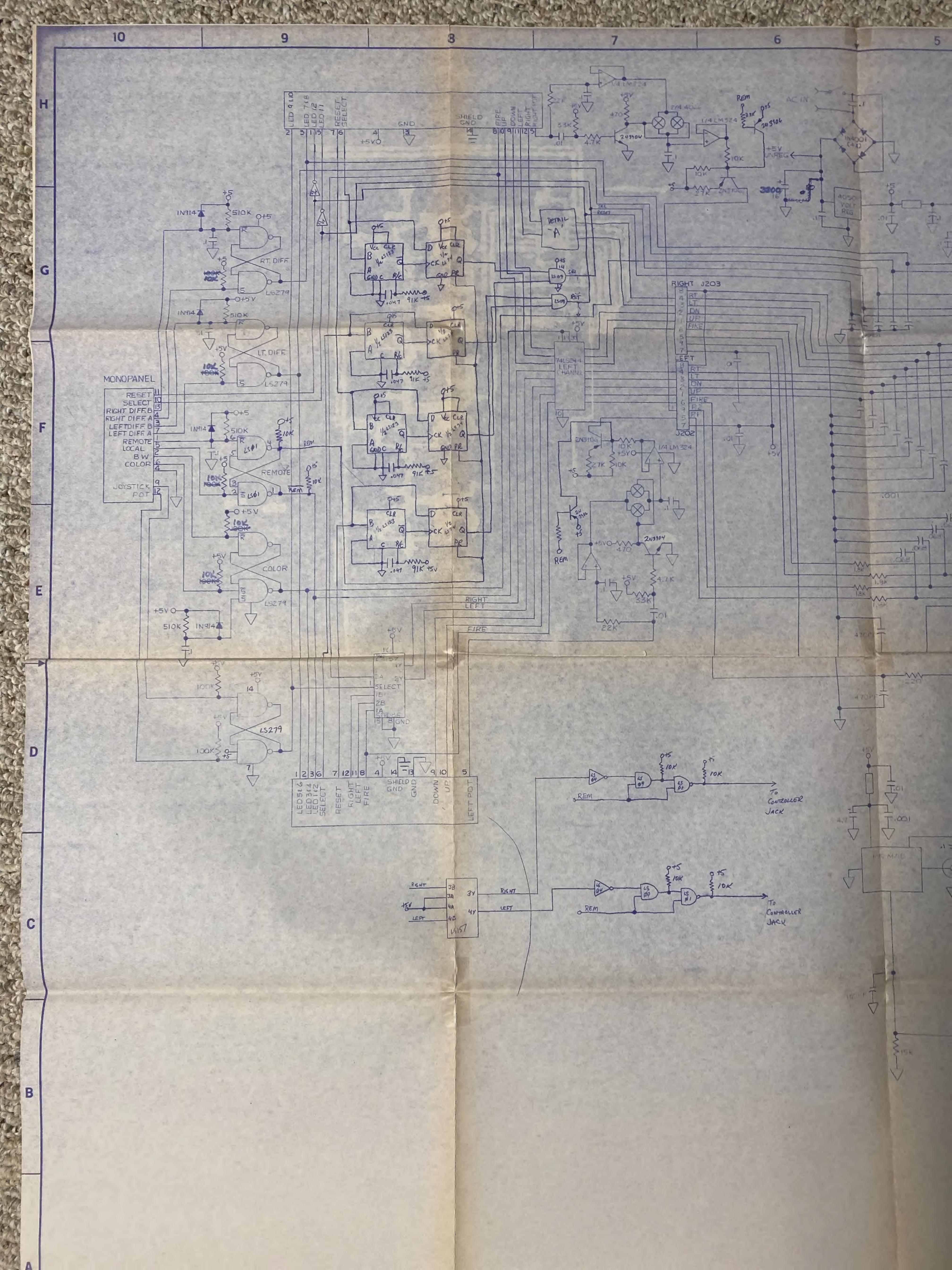


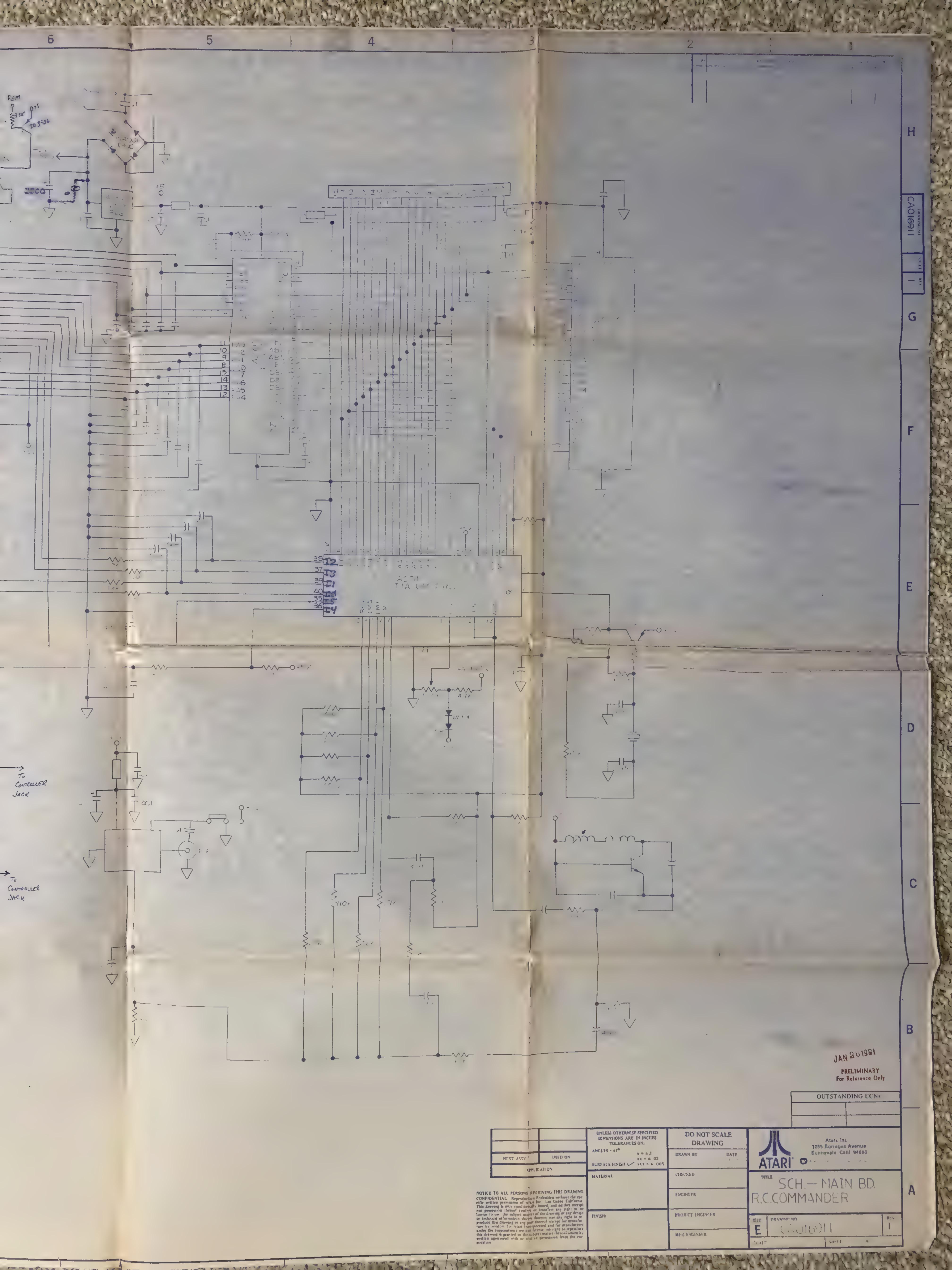














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PRELIMINARY For Reference Only

OUTSTANDING ECNs

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON:

USED ON

ATION

MATERIAL:

rbidden without the spe-., Los Gatos, California. sued, and neither receipt ransfers any right in, or he drawing or any design eon, nor any right to reeof, except for manufaced and for manufacture matter thereof unless by ermission from the cor-

IVING THIS DRAWING

ANGLES = ±10

 $x = \pm .1$ $.xx = \pm .03$

SURFACE FINISH V.XXX = ± .005

FINISH:

DO NOT SCALE DRAWING

DRAWN BY

DATE

CHECKED

ENGINEER

PROJECT ENGINEER

MFG ENGINEER



Atari, Inc. 1265 Borregas Avenue Sunnyvale, Calif. 94086

A Warner Communications Company

TITLE

R.C.OMMANDER

SIZE

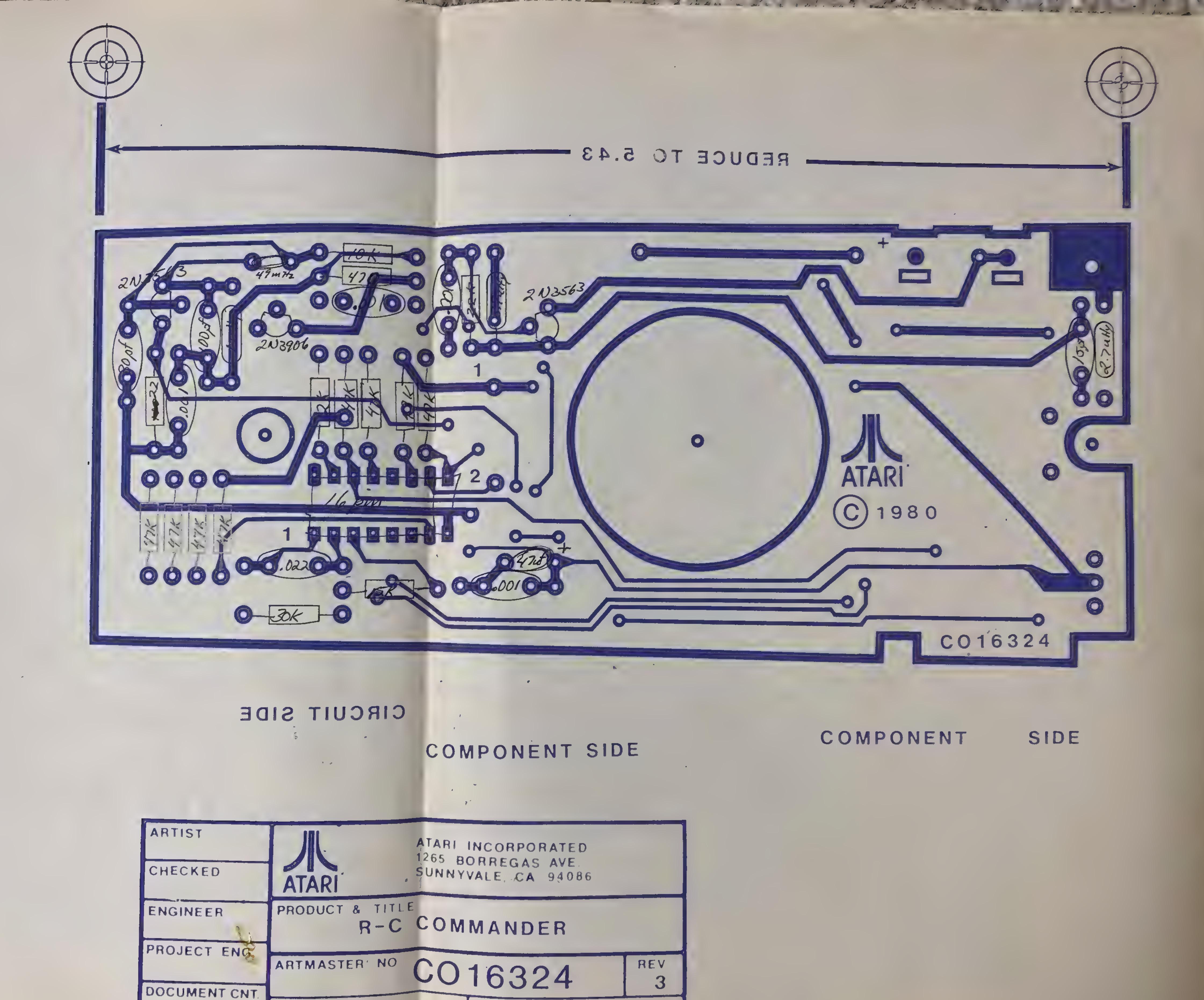
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SCALE

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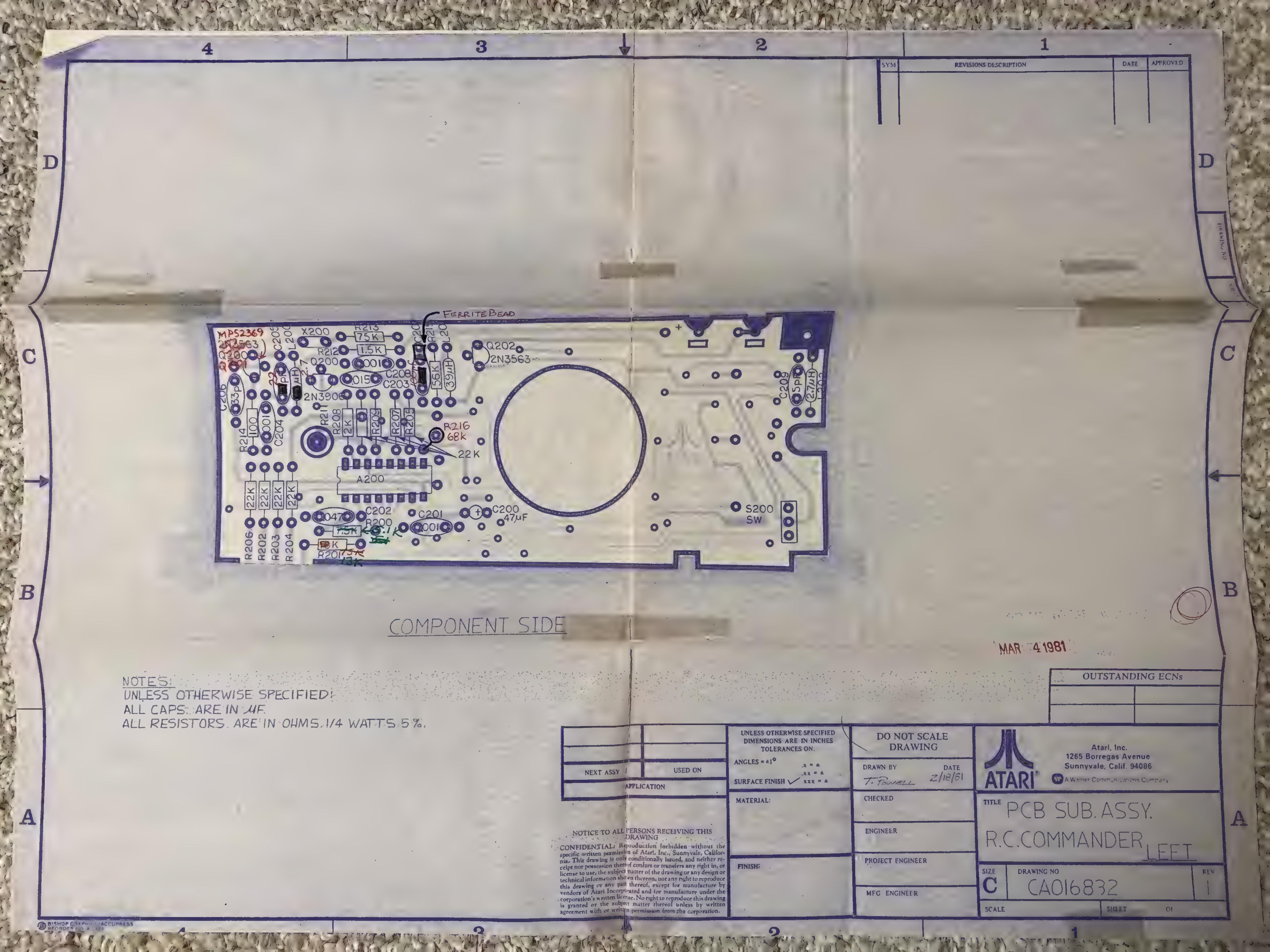
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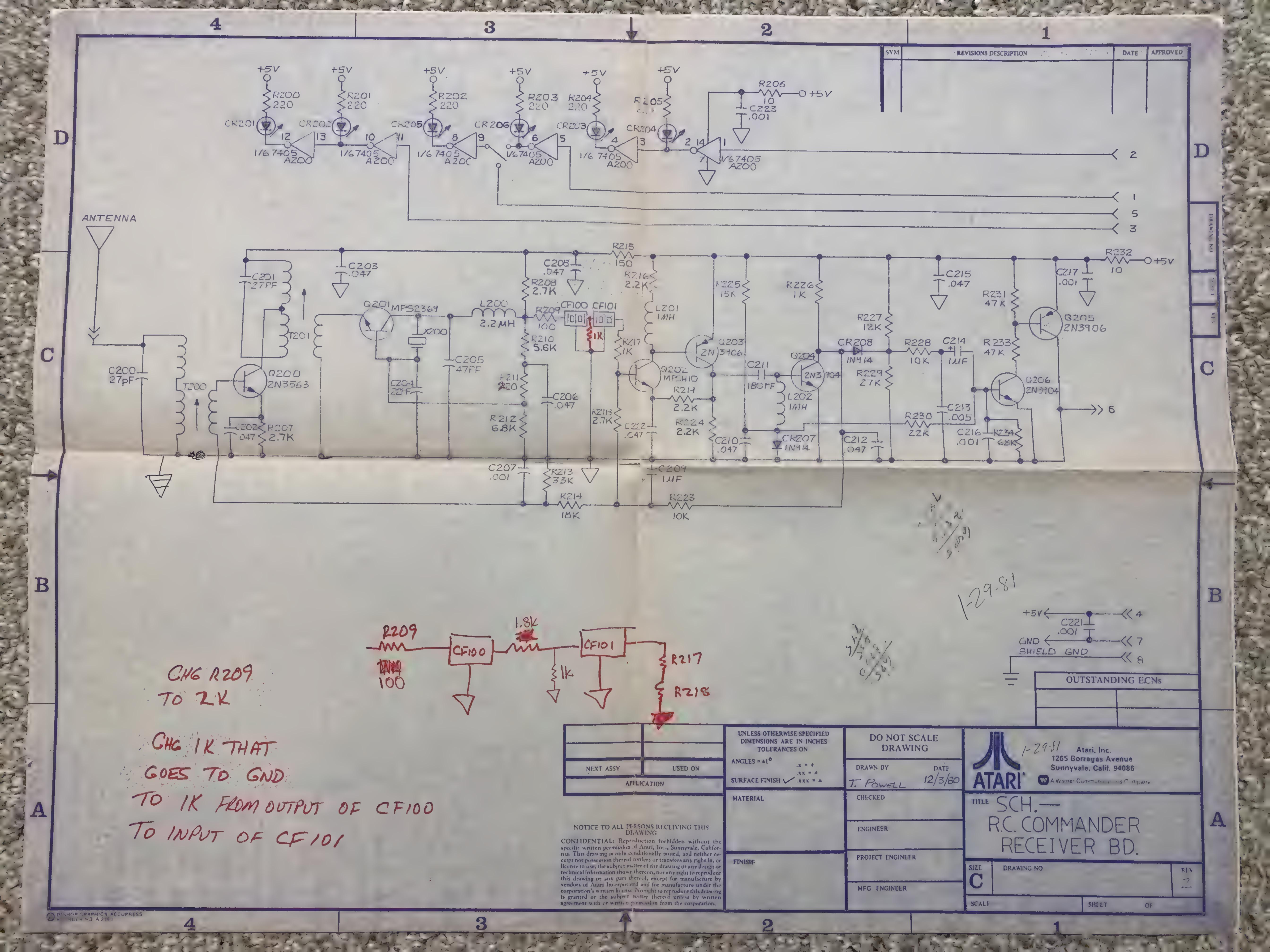
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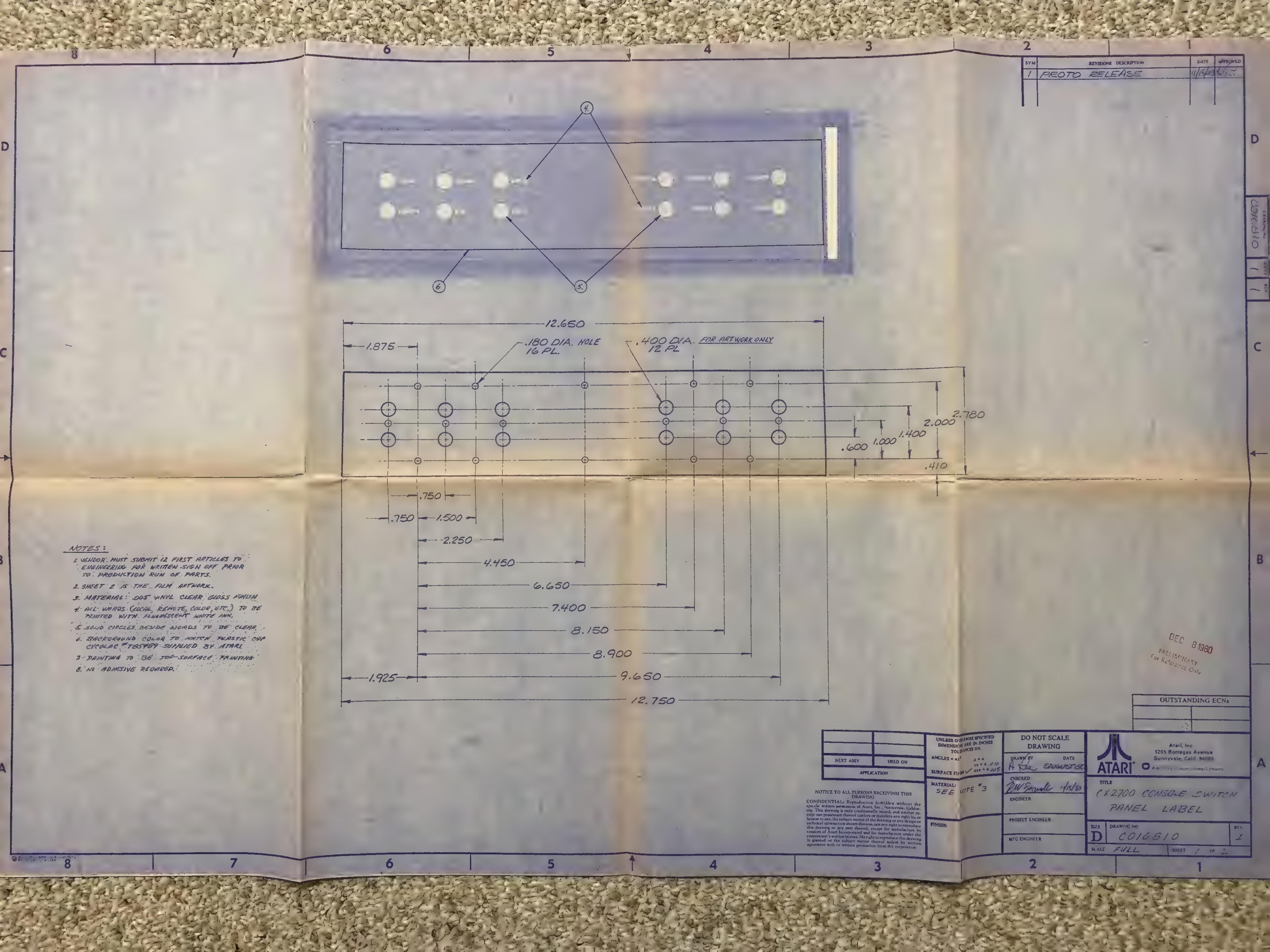


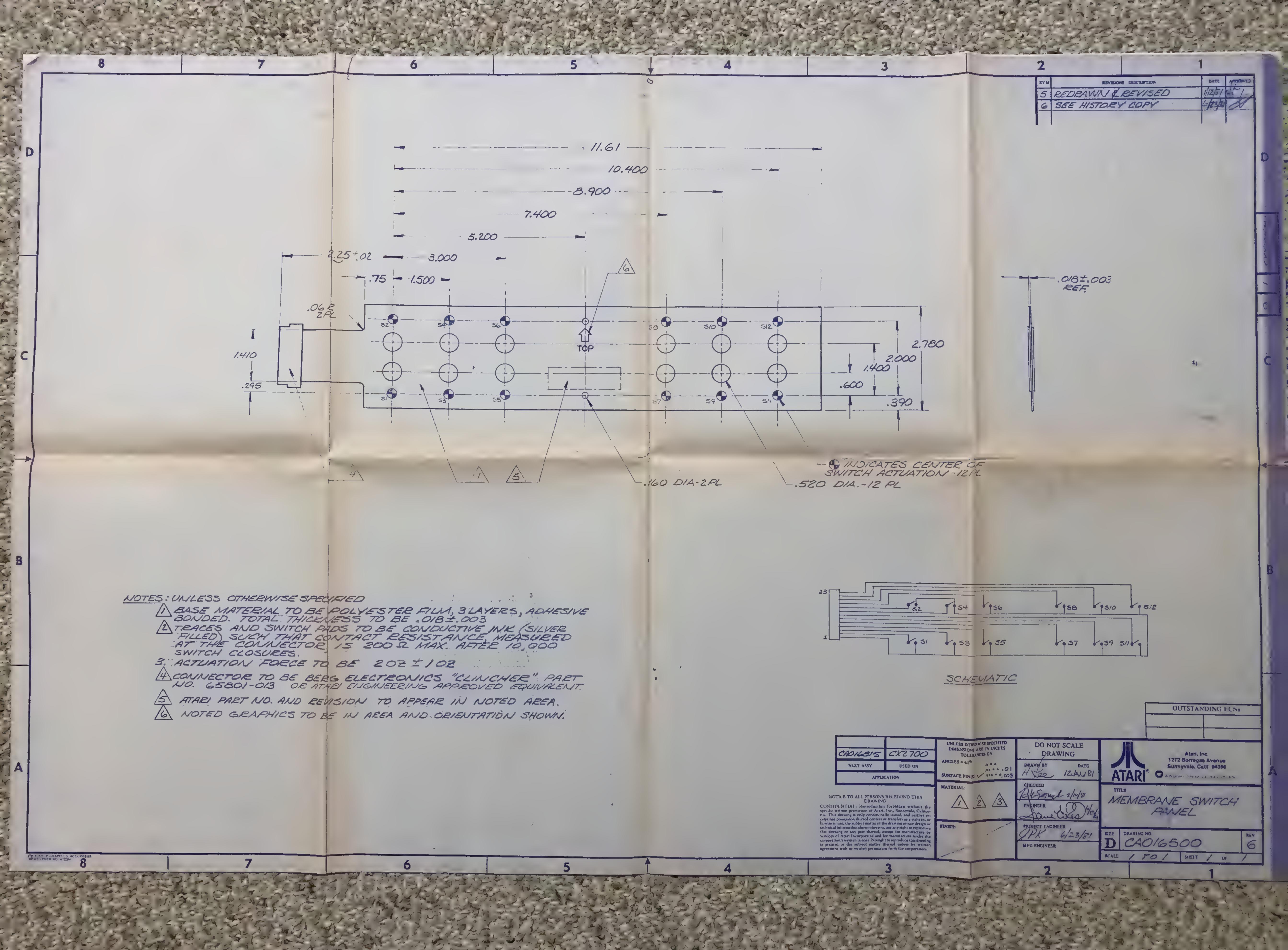
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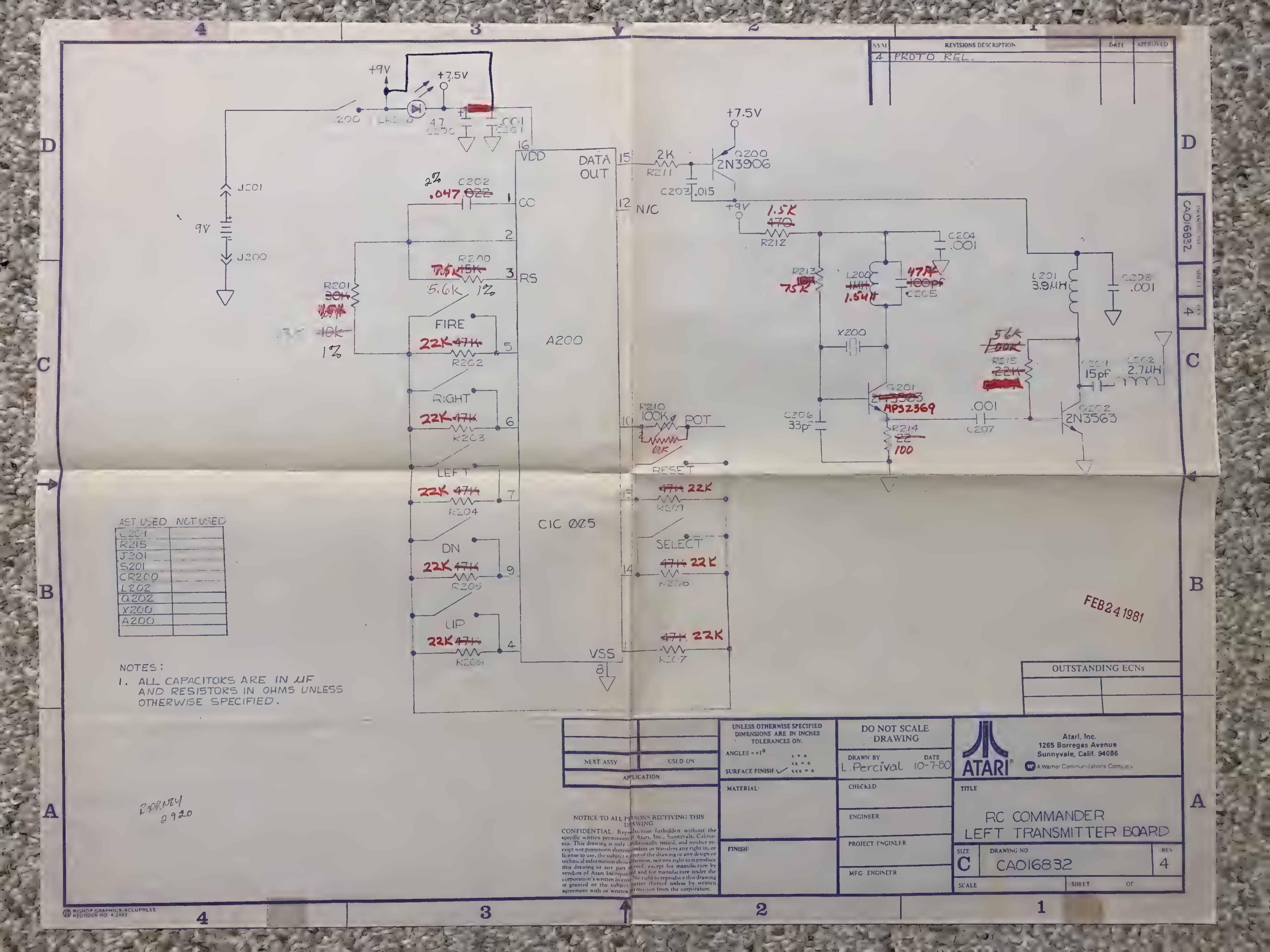
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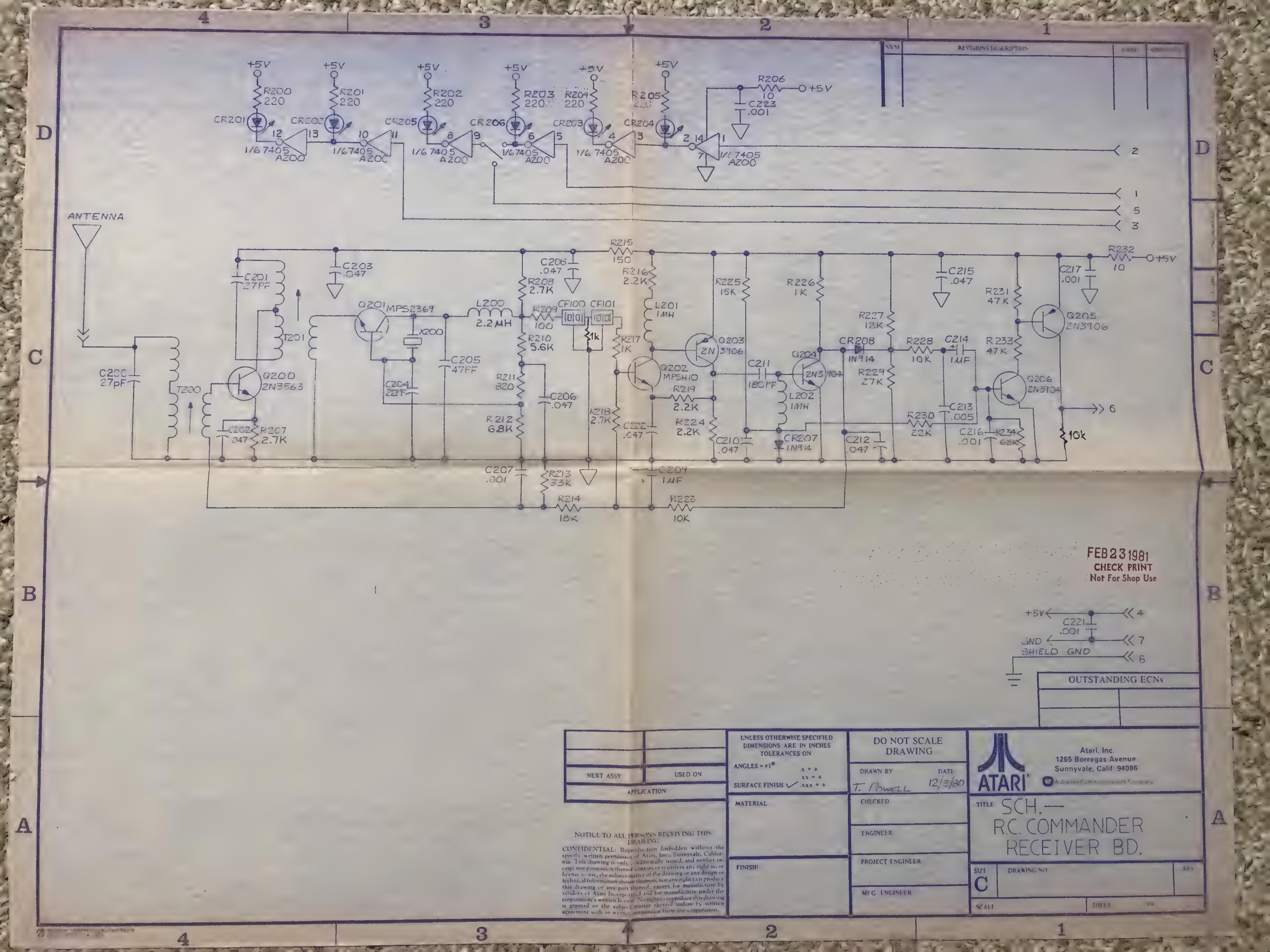


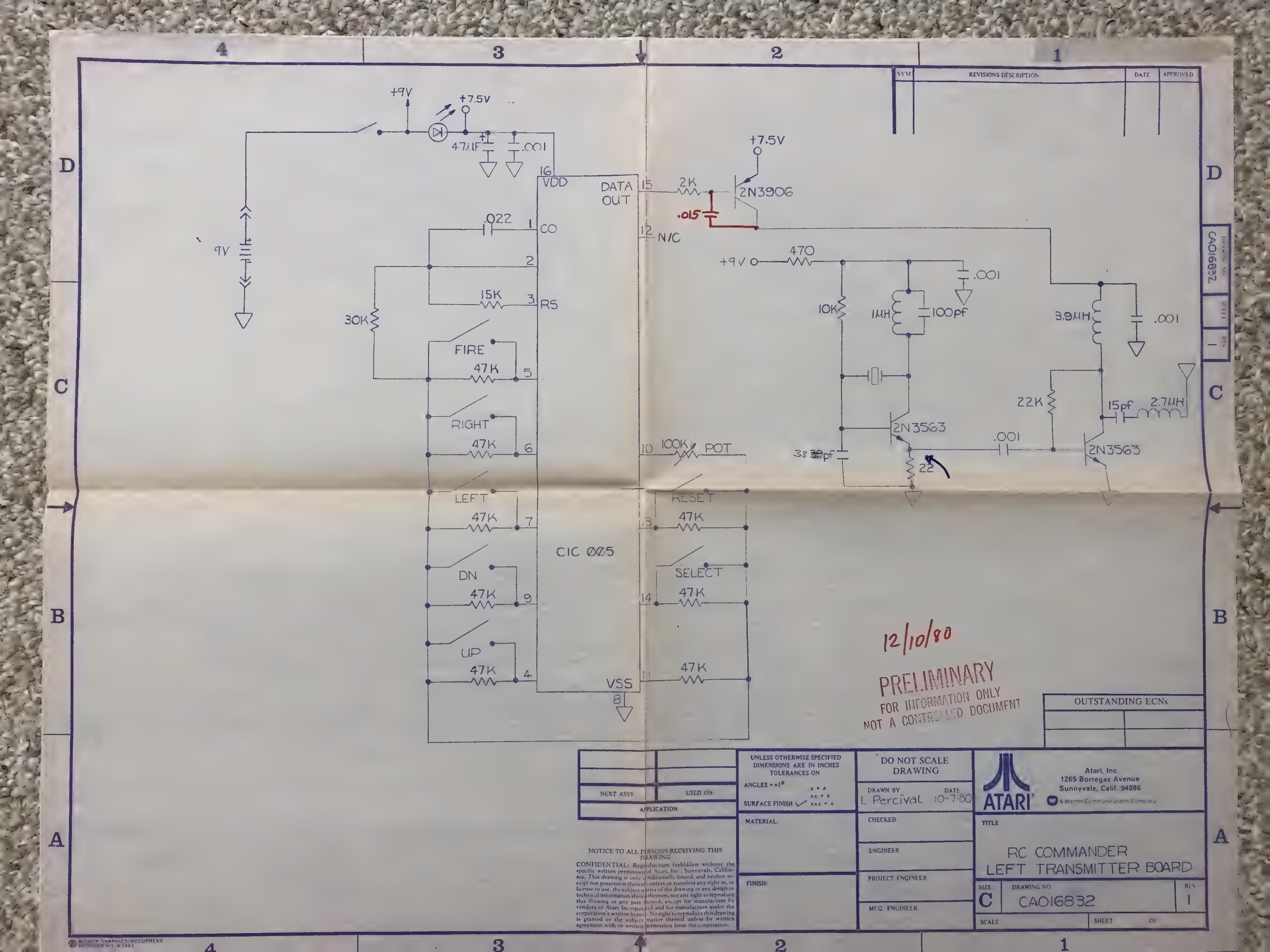


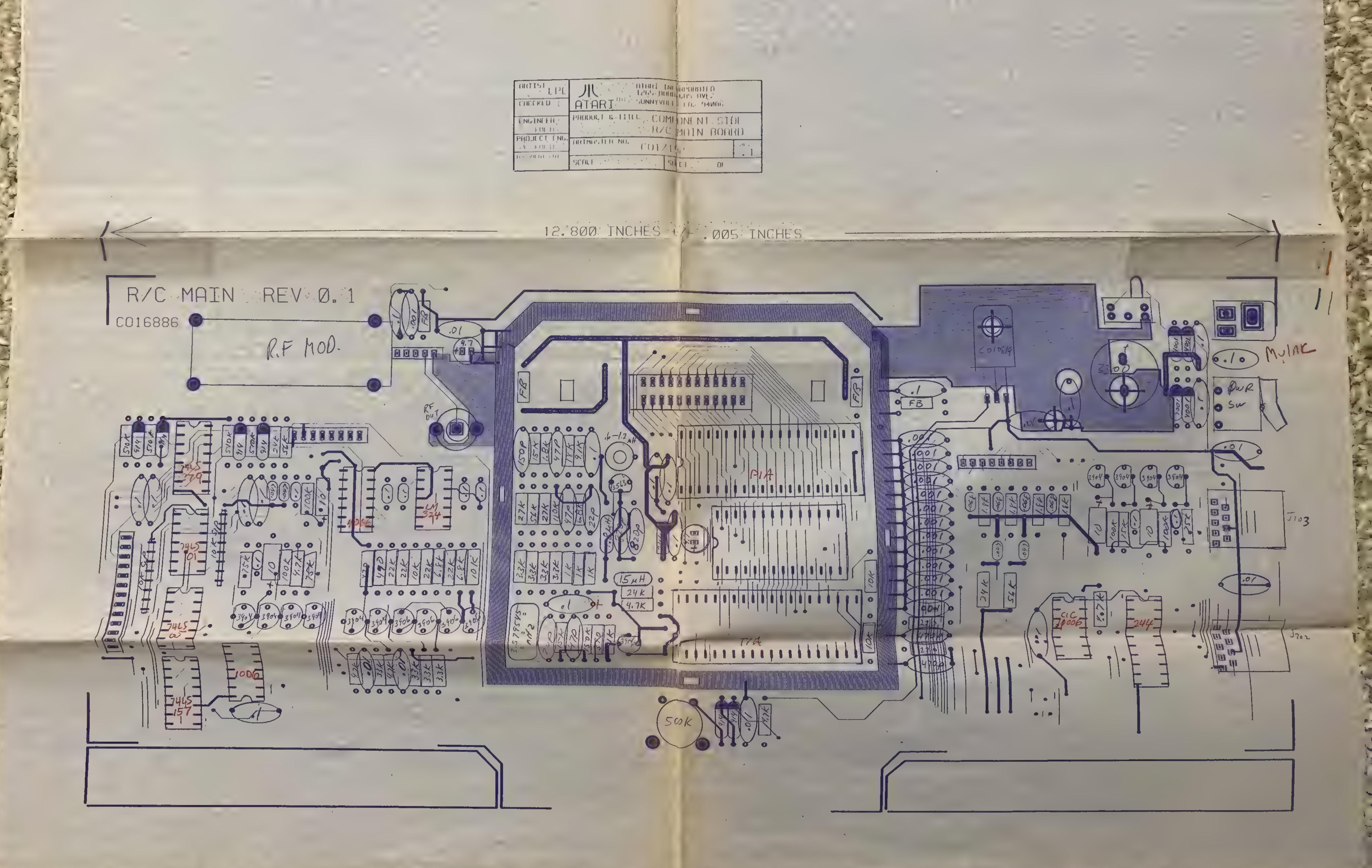


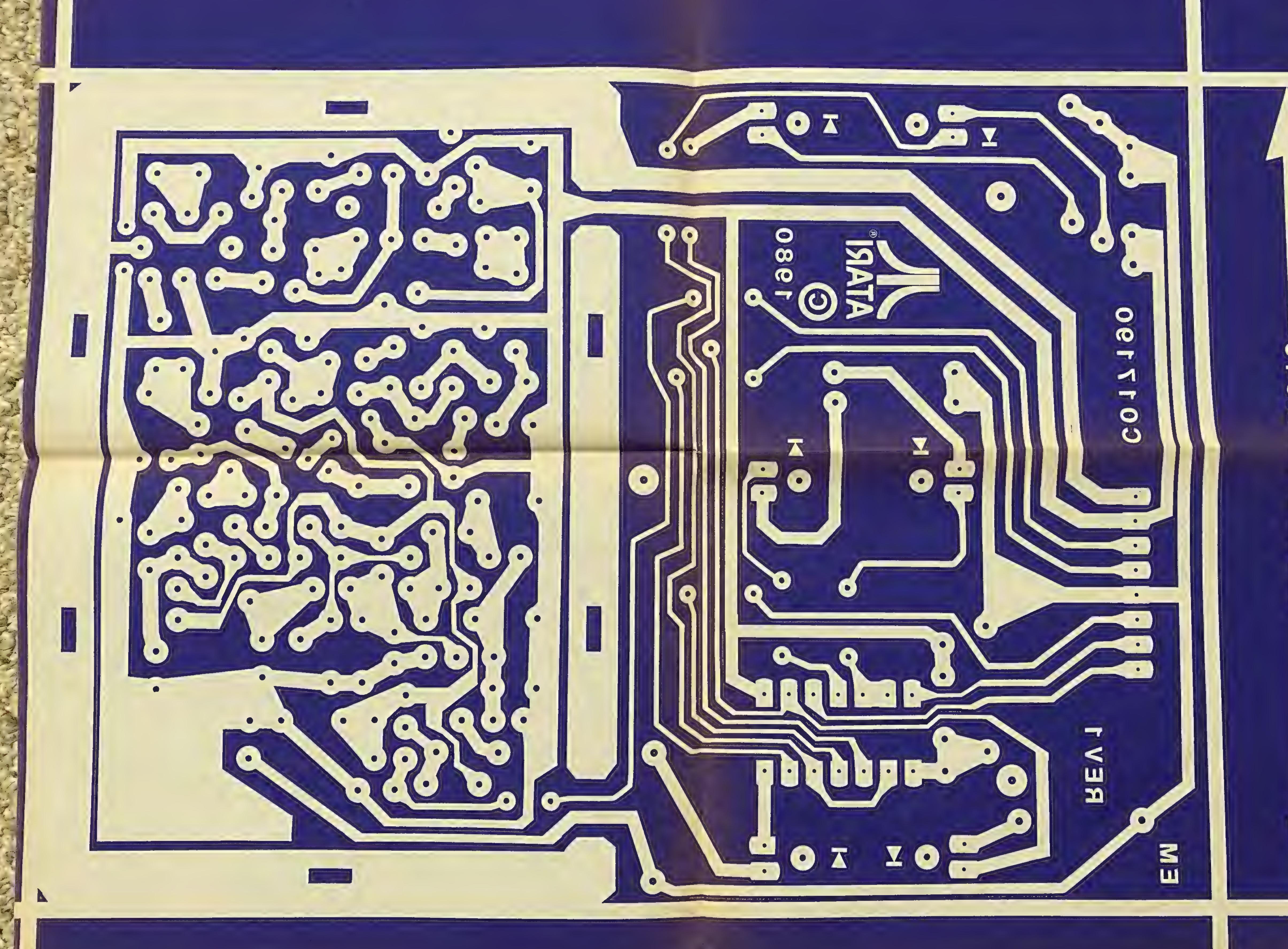




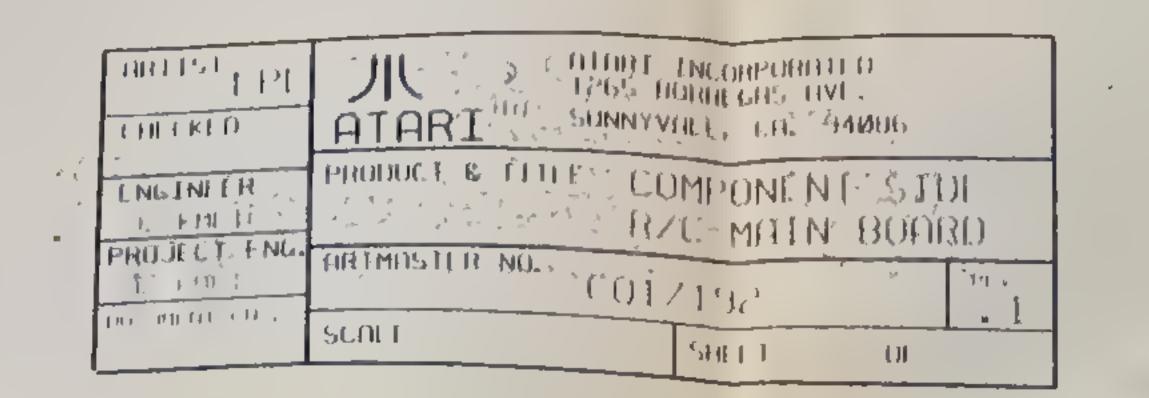


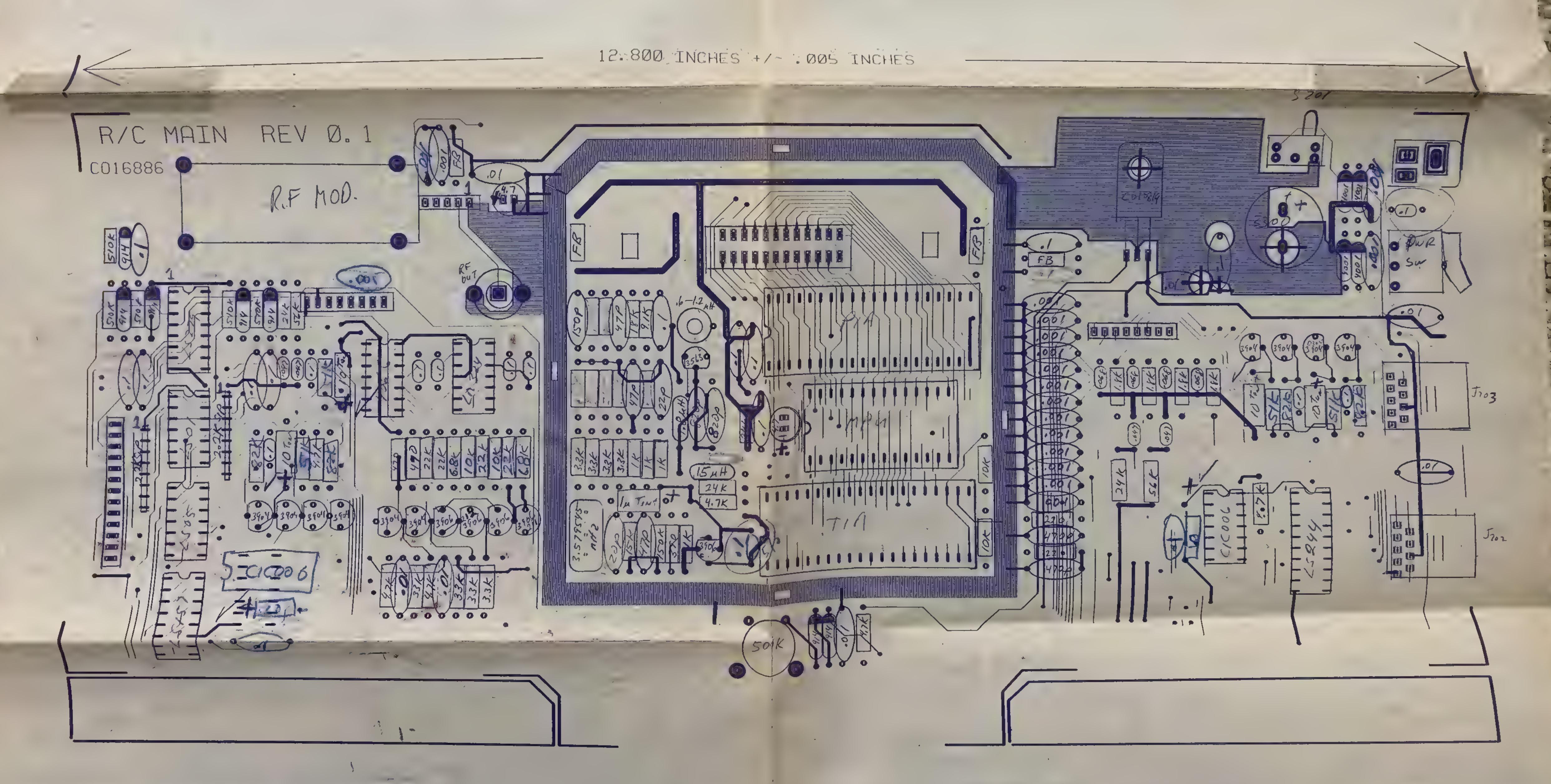


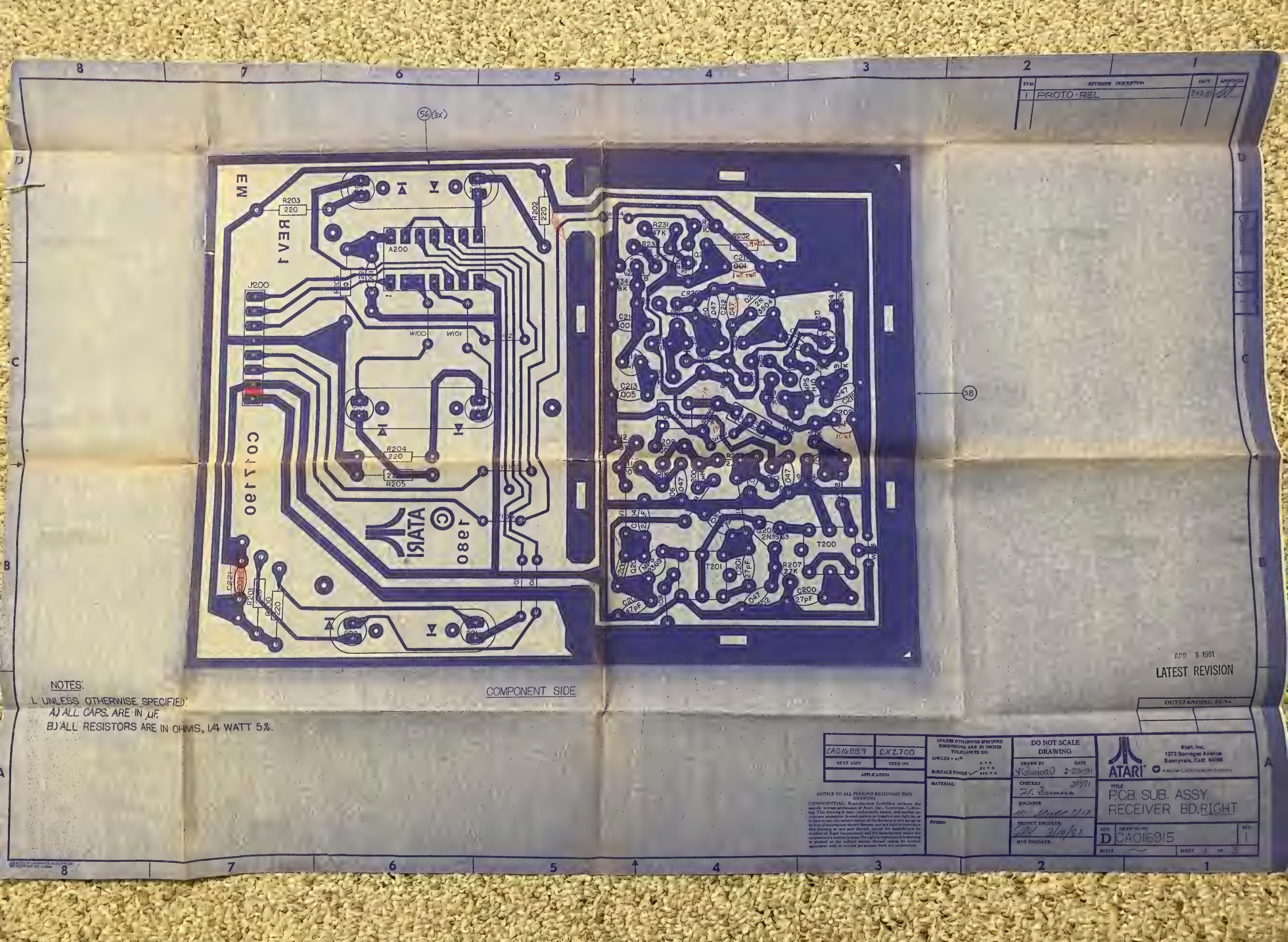




EBONCE 100 BYO



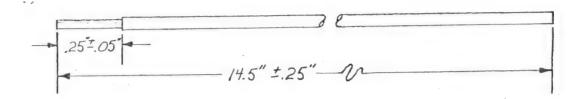




24 PCS. PER DWG. (017237)

RECEIVERS WIMMEN

SPECIFICATIONS:



MATERIAL:

WIRE

20 OR 22 AWG SOLID TINNED COPPER

INSULATION

WHITE PVC OR ENGINEERING APPROVED EQUIVALENT

YM	REVISIONS	DATE	APPROVED			
L' E	PROTO RELEASE	1/20/91	18	ATARI		
				RECEIVER ANTENNA		
				DRAWN BY	ENGINEERG. MGR.	MATERIAL
				CHECKED U/11/19	MEG. ENGINEERG.	C017237

111914 6 4 11/4001 2N 3563 2.14 pm حي 2N 39062 3086 14 pm 4111324 14/pin 29sim 7415244 4066 14 pin 18158 14 pin 4501. 16 pin 15279 6507 MPD 28 pin TIA 40 pin 6532 40 pin XTAL 3.579545.MHZ 4050 16 pin

24 K CAP cordise .. 1 uf 6 (2 my lar 02- 047 mylar 20 -0/ uf 2 0 14 .00/af .068 of cap, EADXY DIPPED 22 pt roof 47/01 3 150pt אק טרף 820 pt cap, Polystice 4.7 of elec. 2 10 ut 16v 4 W 4 1 2200 "16V 12/2 turn Coil 6201 1.8 ceH 6202 Berlite Bead 2200 4203 6204 4205

220 Res. Cor. Kes MONOPANEL 0-2 470 2 IN914 510K - 4 IOOK 1.84 .laf 5 3.3K 4.74 2 74LS00 6.8 4 19.11 10K 6 -2 15K -118k (V) -2 224 2 - 2 244 1 4 27K -156K 0 -2 33/2 2 11 100 K 1110K -1 150K 1 510K 1 500 K MARIBLE

SHOW FREQUENCIES 1X 830 2 × 845 A & B | 2× 780 A&B 1 1 × 740

RECEIVER BOARD SETUP 1- Set Sig. Gen (a) 2X Receiver XTAL + 455 KHZ 2. Set out put of GEn. @ 1 mu 30% MOD. Je Many Acoust (a Collecter of Q204 (Detector) 4. Micasure Sons. at. 6 Vpp 6. 14 6775 0 0 49.375 49.8300 24.695 49,390 49.845

D MONITOR STAL PLISE WIDTH & RECORD @ REMOVE 18K & 68K RESISTORS (R227, R234) DREDUCE CZ14 FROM JUSTO.1 IN STAGES (4) TRY TO MATCH SYNC WIOTH TO XMITTER SPUCOUTPUT (A) PUT II I POT FOR XM ITTER 7.5K TO ADJ. 54 OUC PULSE WIDTH TO . 45 m Sec IDEALLY B) AUJ, OTHER PWS TO 2 m Sec BY CHANGING RZOI

www. Kenselectronics #07018: LT ROUR : (017157 "LR" 6 "RR" "16" "50 KHz" (GRN STKR) Ry ROVR: (017156 (24 6875 MHz) (x2 = 49.375) PLAIN (NO 5/N#) LTROVE COITIS 7 "LP" "16" 24,7175 x2= 117 Peur: Co 17156 "FR" "16" 24.6875 x2= TRANSMITTERS L1=47.9187:2624.95935 "436" W STER L7=49:8287 - (016935 "RION XIA) RI=49,7987-24.8935 ANT. "G3R" G.PCBS RZ=49.8287 COI 6935 "RI" SIN XIAL #25 1."
RZ=49.8294 -2=24.9142 "11" SIN XIAL #25 1." RT. 1841 SMITTHER XTAL CO16935-49 2194MHZ L3 = 49, 8894 = 2 = 24, 9447 (016436 "721" PSBR R4 = 49, 6387 = 2 = 24, 81935 NO : #18R SEBR

TEST SPECIFICATION PROCEDURE FOR PCB PSSENIMALES (AD16912 AND CAD16889

EQUIPMENT REQUIRED:

H-P 8640B SIGNAL GENERATOR, RF

H-P 8654A SIGNAL GENERATOR RF

TEKTRONIX 475 OSCILLOSCOPE

FREQUENCY COUNTER H-P5382A

FET PROBE TEXTRONIX PGZOI WITH 10X

> ATTENUATOR TEXTRONIX PART NO. 010-0376-00 AND GROUND CLIP

TEXTRONIX PART No. 131-1302-00

10X SCOPE PROBE DC POWER SUPPLY 0-10 VDC

DC VOLTMETER 0-10 VDC

SEE FIG. 1 CROSS MOD TEST FIXTURE

JUMPER WIRE

50 OHM CABLES WITH BNC CONNECTORS 12" LONG BNC TO E-Z HOOK ADAPTER PROCEDURE:

- 1. REMOVE INTEGRATED CIRCUIT AZOO FROM ITS SOCKET
- 2. REMOVE RF SHIELD 3. ADJUST POWER SUPPLY TO SYDE
- 4. CONNECT POSITIVE TERMINAL OF THE POWER SUPPLY TO PIN 4 OF J200. CONNECT NEGATIVE TERMINAL OF THE POWER SUPPLY TO PINTOF J200.
- 5. CONNECT FREQUENCY COUNTER TO THE CHANNEL TWO VERTICAL SIGNAL OUT.
- 6. CONNECT FET PROBE TO CHANNEL TWO INPUT. SET PROBE CONTROLS AS FOLLOWS. INPUT COUPLING TO AC DC OFFSET TO OFF 50 OHM TERMINATION TO INTERNA!

- 9. SET THE POWER SUPPLY BACK TO SVDC.
- 10. SET UP H-P8640B AS FOLLOWS.

RF ON-OFF SWITCH TO ON OUTPUT LEVEL TO I MV. AM SLIDE SWITCH TO INTERNAL FM SLIDE SWITCH TO OFF MODULATION FREQUENCY TO 1KHZ DEPTH OF MODULATION TO 100% FREQUENCY PER TABLE 2. PUSH LOCK SWITCH

- 11. CONNECT BNC CABLE WITH E-Z HOOK ADAPTER
 TO H-P8640B.
- 12. CONNECT GROUND SIDE OF CABLE TO GROUND NEAR ANTENNA CONNECTION ON PCB. CONNECT SIGNAL SIDE TO ANTENNA WIRE END FARTHEST FROM PCB
- 13. CONNECT IOX SCOPE PROBE TO CHANNEZ 1 INPUT ON THE SCOPE.
- 14. CONNECT PROBE TO THE COLLECTOR OF Q204.
- 15. ALTERNATELY TUNE TOOD AND TOOI FOR A MAXIMUM AC SIGNAL AT THE COLLECTOR OF QZOY.
- 16. CHANGE OUTPUT LEVEL OF H-P8640B TO 100 MV. REPEAT STEP 15.
- 17. VERIFY THAT THE AMOUNT OF R.F. SICNAL NEEDED TO GET O. 8 YP-P AT THE COLLECTOR OF QZOH IS LESS THAN 200 UV.
- 18. VERIFY THAT THE AMOUNT OF SIGNAL AT THE COLLECTOR OF QZOS TO SWING SVP-P IS LESS THAN 2 VP-P

- SET OUTPUT LEVEL OF H-P 8640B TO INV. SET DEPTH OF MODULATION TO 30%.
- SET UP H-P 8654A AS FOLLOWS 20. AM SWITCH TO INTERNAL FM SWITCH TOOFF INTERNAL, AM FREQUENCY TO IKHZ DEPTH OF MODULATION TO 30% OUTPUT LEVEL TO 1 MV. FREQUENCY PER TABLE 3.
- 21. CONNECT GROUND OUTPUT OF CROSSMOD TEST FIXTURE TO GROUND NEAR ANTENNA CONNECTION ON PCB. CONNECT ANTENNA DUTPUT TO ANTENNA WIRE END FARTHEST FROM PCB.
- 22. CONNECT OUTPUT OF H-P8640B TO ONE OF THE TEST FIXTURE INPUTS.
- 23. MEASURE THE PEAK TO PEAK AC VOLTAGE AT THE COLLECTOR OF Q204
- 24. SET AMSLIDE SWITCH OF H-P8640B TO OFF. LEAVE GENERATOR OUTPUT CONNECTED TO TEST FIXTURE.
- 25. CONNECT H-P8654A TO THE OTHER INPUT OF THE TEST FIXTURE.
- 26. INCREASE THE OUTPUT LEVEL OF THE H-P 8654A UNTIL THE PEAK TO PEAK VOLTAGE AT THE COLLECTOR OF COZOY IS 20% OF THE VALUE PREVIOUSLY MEASURED.
- 27. VERIFY THAT THE OUTPUT LEVEL OF THE H-P8654A. IS GREATER THAN 100 mV.
- 28. REPLACE I.C. AZOO TO ITS SOCKET. 29. REPLACE R.F. SHIELD
- L.E.D DRIVER TEST FOR CA016912
 - 1. GROUND PINS 1, 2, 3 OF J200. CRI, 3, 5 SHOULD BE LIT.
 - 2. CONNECT PINS 1, 2,3 OF J200 TO +5VPC. CR 2,4,6 SHOULD BE LIT.

L.E.D DRIVER TEST FOR CAO 16889

- 1. GROUND PINS 1,2,3,5 OF J200. CR1,3 SHOULD BE LIT.
- 2. CONNECT PINS 1,2,3,5 OF J200 TO +5 VDC. CR2,4,56 SHOULD BE LIT.

TABLE 1 OSCILLATOR FREQUENCY

ASSEMBLY	FREQUENCY (MHZ)	TOLERANCE
CAD16912		1-2 KHZ

TABLE 2 TRANSMIT FREQUENCY

ASSEMBLY NO.	FREQUENCY (MHZ)	TOLERANCE
CA016912	49.890	÷ 10
CA016889	49.830	\$ 10HZ

TABLE 3. CROSS MOD TEST FREQUENCY

ASSEMBLY NO.	FREQUENCY (MHZ)	TOLERANCE
CA016912	49.831	± 2 KHZ
CA016889	49.891	- 2 KHZ

FIG. 2 CROSSMOD TEST FIXTURE

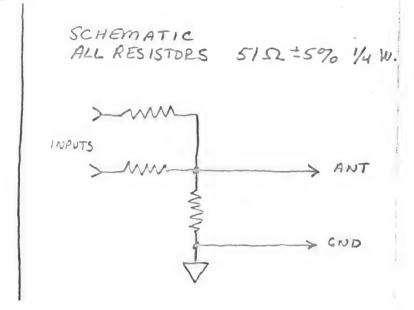


FIG. 2 LED. LOCATIONS (COMPONENT SIDE)

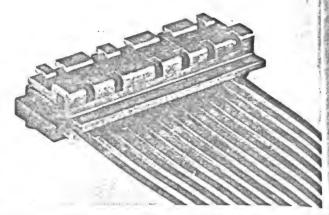
OCRZ	O CR4	O CR6
CRI	O CR3	O CRS
R	F. SHIEL	D



4850 Flat Flexible Cable Connector

General Features:

- Accepts flat conductor flexible
 cable or flat flexible circuitry on .100" centers
- Snaps into P.C. board with retaining locks
- Printed circuit board solder tails
- Terminals for ease of wave soldering
- Built in polarized strain relief
- 5-25 circuits .
- Zero insertion force

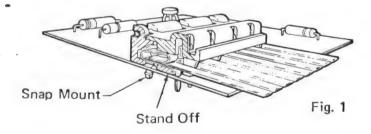


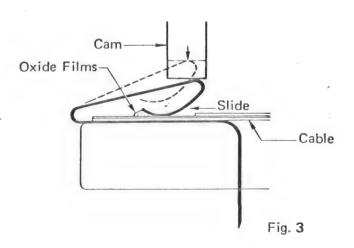
The 4580 offers savings in assembly time and cost without neglecting quality, when utilizing the cost effective flat flexible cable and flexible circuitry.

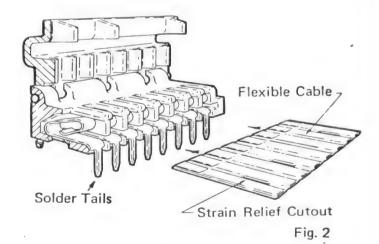
The terminal is the well known and tested "KK" double cantilever terminal. The cable is inserted between the second arm and the base of the terminal. When the cover is closed the cam is actuated. (See fig. 3) forcing the area of contact of the terminal to "slide" on the surface of the cable resulting in wiping off oxide films without damaging conductor plating.

The cover locks in place maintaining the cable positively in place and assuring contact. (See fig. 4)

Design Features:







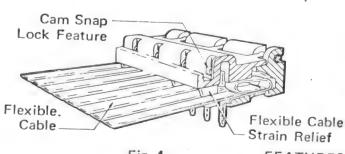


Fig. 4

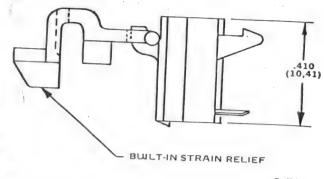
FEATURES

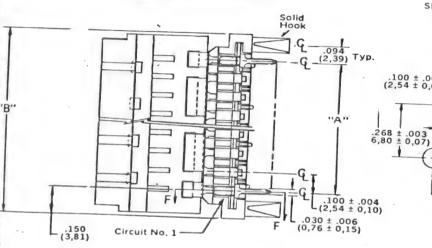
Hat Flex Connector

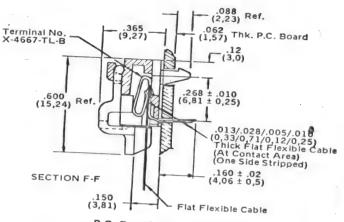
4850

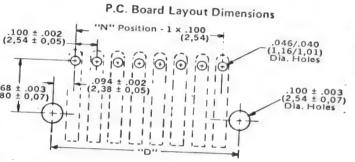
molex:

Dimensions:





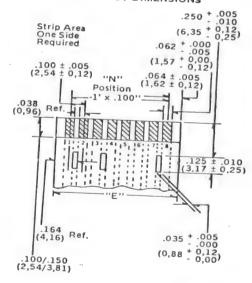




rdering/ Dimensional Information

3/ 5/11	10113101	iai IIII	ormatic	on	
Order No.	Dim. A	Dim. B	Dim. D	Dim. E	Cable Slots for Strain Relief Located Betwee
15-25-4051	(10,16)	.700	.588	.590	The state of the s
15-25-4061	.500	.800	.688	.690	1
15-25-4071	.600	.900	.788	.790	
15-25-4081	.700	1.000	.888		
15-25-4091	.800	1.100	.988	(22,60)	
15-25-4101	.900	1.200		(25,14)	1 & 2, 3 & 4, 8 & 9
15-25-4111	1.000	1.300	(27,64)	(27,68)	1 & 2, 3 & 4, 9 & 10
15-25-4121	1.100		(30,18)	(30,22)	1 & 2, 3 & 4, 10 & 11
	1.200	(35,56)	(32,71)	(32,76)	1 & 2, 3 & 4, 11 & 12
	1.300	(38,10)	(35,26)	(35,30)	1 & 2, 3 & 4, 12 & 13
	(33,02)	(40,64)	(37,79)	(37,84)	1 & 2, 3 & 4, 13 & 14
	(35,56)	(43,18)	(40,34)	(40,38)	1 & 2, 3 & 4, 14 & 15
	(38,10)	(45,72)	(42,87)	(42,92)	1 & 2, 3 & 4, 15 & 16
	(40,64)	(48,26)	1.788 (45,41)	1.790 (45,46)	1 & 2, 3 & 4, 17 & 18
	(43,18)	(50,80)	1.888 (47,95)	1.890 (48.00)	1 & 2, 3 & 4, 17 & 18
	(45,72)	2.100 (53,34)	1.988	1.990	1 & 2, 3 & 4, 18 & 19
		(55,90)	2.088	2.090	1 & 2, 3 & 4, 19 & 20
5-25-4211	2.000	2.300	2.188	2.190	
5-25-4221	2.100	2.400	2.288	2.290	1 & 2, 3 & 4, 20 & 21
5-25-4231	2.200	2.500	2.388	2.390	1 & 2, 3 & 4, 21 & 22
5-25-4241	2.300	2.600	2.488	2.490	1 & 2, 3 & 4, 22 & 23
5-25-4251	2.400	2.700	2.588	2 590	1 & 2, 3 & 4, 23 & 24
	Order No. 15-25-4052 15-25-4062 15-25-4061 15-25-4081 15-25-4091 15-25-4101 15-25-4111 15-25-4121 15-25-4131 15-25-4151 15-25-4161 15-25-4161 15-25-4191 15-25-4201 5-25-4201 5-25-4201 5-25-4201 5-25-4201 5-25-4201 5-25-4201	Order No. Dim. A 15-25-4051	Order No. Dim. A Dim. B 15-25-4051 .400 (10,16) .700 (17,78) 15-25-4061 .500 (12,70) .800 (22,86) 15-25-4071 .600 (15,24) .900 (22,86) 15-25-4081 .700 (15,24) (22,86) 15-25-4091 .800 (17,79) (25,40) 15-25-4101 .900 (20,32) (27,94) 15-25-4101 .900 (22,86) (30,50) 15-25-4111 1.000 (28,40) (33,02) 15-25-4121 1.100 (27,94) (35,56) 15-25-4131 (30,48) (38,10) 15-25-4141 1.300 (30,48) (38,10) 15-25-4151 1.400 (1,700) (40,64) 15-25-4161 1.500 (35,56) (43,18) 15-25-4161 1.500 (45,72) (48,26) 15-25-4171 (1,600) (48,26) (48,26) 15-25-4181 1,700 (20,00) (48,26) 15-25-4191 1,800 (20,00) (48,26) 15-25-4191 1,800 (20,00) (55,90) 5-25-4201 1,900 (20,00) (50,80)	Order No. Dim. A Dim. B Dim. D 15-25-4051 .400 (10,16) .700 (20,32) .588 (14,94) 15-25-4061 .500 .800 (20,32) .688 (20,02) 15-25-4071 .600 (15,24) (20,32) (27,47) 15-25-4081 .700 (10,00) .888 (20,02) 15-25-4091 .800 (20,32) (27,94) (25,10) 15-25-4101 .900 (22,86) (30,50) 1.088 (27,64) 15-25-4111 1.000 (22,86) (30,50) 1.088 (27,64) 15-25-4121 1.100 (27,94) (33,02) (30,18) 15-25-4121 1.100 (27,94) 1.500 (33,02) (30,18) 15-25-4131 1.200 (30,48) 1.500 (33,71) 1.388 (30,48) (30,48) (38,10) (45,64) (37,79) 15-25-4141 1.300 (1,500 (1,500 (35,26)) 1.388 (40,34) 15-25-4151 1.400 (33,02) (40,64) (37,79) 15-25-4151 1.400 (33,02) (40,64) (37,79) 15-25-4151 1.400 (46,40) (45,72) (42,87)	15-25-4051

CABLE LAYOUT DIMENSIONS



NOTE: Maximum Cable Thickness .015" (0,38 mm) at contact



ASSEMBLY TITLE / R.C. C	OMMANDER (RIGHT) PLCA010	3914
PARTS LIST SPEC	CIFICATION Page <u>I</u> of	2
Drawn Marciona 4/1/81		
Checked . Range a 3/19/81		
Proj. Eng. OPK 3/19/2)	Elec. Eng.	Rev.
	Mfg. Eng.	1

AII	171	Checked	1. K. 312	C14 3	119/31	Meen. Eng.	Desi
		Proj. En	E. OPK	3/19	701	Elec. Eng.	Rev.
,			0	1	10	Mfg. Eng.	1
Rev.	Description	on.	Date	Appry,	Rev.	4000	Date Apprv.
1	PROTO RELEAS	E	4-6-81	111		LDB 8 100	
						LATEST REV	ISION
Item	Part Numbe	r Qty.	1			Description	
1 2 3 4 5 6 7 8 9 10 11 12 13 14	14-5101 14-5152 14-5202 14-5752 14-5153 14-5223 14-5563 14-5683 14-5753 C014179-04 C014179-01 C014181-01	1 1 1 1 1 8 1 1 1 1 1 1 3	RESIS		IC, A	%, 100 ohm, R214 1.5K ohm, R212 2K ohm, R211 7.5K ohm, R200 15K ohm, R201 22K ohm, R202-209 56K ohm, R215 68K ohm, R216	C209 C205
15 16 17 18 19 20 21 22	21-101153J 21-101473J C015505 C014179-19 33-2N3906 34-2N3563 34-MPS2369	1 1 1 1 1 1	' El	LECTRO CERAMIC	LYTIC ,AXIAL , 2N3	LM, 015uf, C203 " 047uf, C202 C, RADIAL, 47uf, 16V, L, 100pf, NPO, 5%, C207 8906, Q200 8563, Q202 2369, Q201	2
23 24 25 26 27 28	C017224 C017225 C017542 C016935	2 1 1		TE BEAL	2.7uh 3.9uh	y,5%, L202, L200 y,5%, L201	·
29 30 31 32	C014386-03	1		,	., 16	PIN, A200	
33	CO16324	1 1	P.C.I	В.			

Rev.

1

Item

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3

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21 22 23

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27

14-5100

14-5101

14-5151

14-5221

14-5821

14-5102

14-5222

14-5272

14-5562

14-5682

14-5103

14-5153

14-5183

14-5223

14-5273

14-5333

14-5473

14-5683

2A-018

2A-027

2A-020

2A-028

2B-005

2

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R.C.COMMANDER, RIGHT P/L_ CA016915 ASSEMBLY TITLE RECEIVER SUB-ASSEMBLY PARTS LIST SPECIFICATION Page 1 of 3 Checked 3 Mech. Eng. Rev. Elec. Eng. M. Stoke Proj. Eng. 1 Mfg. Eng. Rev. Apprv. Description Date Apprv. Description Date 3-13-81 PROTO RELEASE 8 1981 APR REVISION Description Part Number Qty. RESISTOR, 4W, 5%, 10 OHM, R-206, 232 12 1 100 " , R-209 150 " , R-215 1 220 " , R-200 - 205 820 " , R-211 1 K " , R-217, 23 6 1 3 226. 236 2.2K" , R-216, 3 219, 224 3 2.7K", R-207, . 208, 218 . 1 5.6K", R-210 6.8K", R-212 1 10K " , R-223, 15K " , R-225 3 228, 235 1 2 18K " , R-214, 227 1 22K " , R-230 1 27K " , R-229 33K " , R-213 1 47K " , R-231, 2 233 1 68K " , R-234 1 CAP, CER, DISC: 22pF, NPO, C-204 1 47pF, ", C-205

27pF, "

180pF, " , C-211

.001µF, Z5U, C-217, 216,

, C-200, 201

221,

207,



ASSEMBLY TITLE R.C. COMMANDER (LEFT) DL CA016832

PARTS I	PARTS LIST SPECIFICATION		
Drawn			
Checked	Mech. Eng.		
Proj. Eng.	Elec. Eng.		Rev.
	Mfg. Eng.		1
			1.

						Mfg. Eng.			1
Rev.	Description		Date	Apprv.	Rev.	Descrip	fion	Date	Apprv
1	PROTO RELEASE								
			ı			Descriptio n			
Item	Part Number	Qty.		•		Description			
1 2 3	14-5101 14-5152 14-5202	1 1 1	11		11 11	2K ohm,	R211		
5	14-5752 14-5153	71 18	11		11 11 11 11 11 11	15K ohm,	R201)9	
6 7 8	14-5223 14-5563 14-5683	1 .1	"		11 11	56K ohm,	R215		
9 10	14-5753	-1	. "		n i n	75K ohm,	R213		
11 12 13 14	C014179-04 C014179-18 C014179-05 C014181-01	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CAP.	CERAM	IC, A	" 47pf,	NPO,5%, NPO,5%, NPO,5%, f, Z5U,	C209	
15 16 17 18	21-101153J 21-101473J C015505	·1 1	11			LM, 015u " 047u , RADIAL, 4	f, C2	20 3 20 2	
19 20 21 22 23 24 25 26	33-2N3906 34-2N3563 34-2M22369 C017222 C017224 C017225	11111		CTOR,	2N3 m/ 1.5uh 2.7uh	906, Q200 563, Q 201 , Q \$2369, \$\Phi^2\$ \$y, 5%, L200 \$y, 5%, L202 \$y, 5%, L201	01		
27 28 29	C016936 .	• 1	CRYS'	ΓAL, 4	9, 889	94 MHZ, X200),		
30 31 32	CO14386-03	1	SOCK	ET, IC	, 16	PIN			
33	CO16324 -	1	P.C.	В.					



ASSEMBLY TITLE	R.C Com	Transmitter MANDER	P/L CAO16	832

PARTS	LIST SPECIFICATION	Page 1 of
Drawn		
Checked	Mech. Eng.	٠.
Proj. Eng.	Elec. Eng.	Rev.
	Mfg. Eng.	

Rev.	Description	Date	Apprv.	Rev.	Description	Date	Apprv
	Proto Release						1
							1.

			Description
Item	Part Number	Qty.	Description
- 1	14-5022	/	Res., Car, 22 ohm, 1/4w, 5%
2	14.5470	/	" 470 Ohm, /4w, 5%
3	14-5202	1	11 " 2K " "
4	14-5103	1	" 10K " " 11
5	14-5153	/	11 4 15k 11 " "
6	14-5223	1	11 11 224 11 11 11
6 7	14-5303	1	11 9 304 11 11 11
8	14-5473	8	11 11 478 44
9	CO 16 321	/	" Var, 100K ohm
10		,	CAP, mica .022 uf
11	CO 14181-01	4	CAP, CER. AXIAL .001 wf , 750
12		1	11 11 11 100 pf 11
13		1	
14		1	" " Disc. 33pf NPO
15	Co 15505	1	11 ELECARAD. 47 uf, 16V
17	33-2N3906	/	TRANSISTOR, 2N3906
18	34-213563	2	" 2N3563
19	CO 14383	/	COIL, I Why
20		,	1 2.7 11
21			3.9 %
22	·		Crystal, 49.890 MHz Dr 49.830 MHz
23	co14386-03	,	16 pin Socket
24			J. Secker
25	Co 16324	,	200
	-576524	'	PC8



ASSEMBLY TITLE

SUB-ASSEMBLY R.C. STELLA MAIN P/L CA016911

PARTS	Page 1 of 2	
Drawn		
Checked	Mech. Eng.	I Part
Proj. Eng.	Elec. Eng.	Rev.
	Mfg. Eng.	-

Rev.	Description		Date	Apprv.	Rev.	Description Date App) I V
1	PROTO RELEASE						
					-		
					-		
		-		-	1		
					-		
Item	Part Number	Qty.				Description	
	14 5221	2	RESTS	TOR. 1	/4. 5%	, 220 ohm R242, R244	
1	14-5221 14-5391	1	111111111111111111111111111111111111111		11	390 ohm R261	
2	14-5391	2	n		n 'n	470 ohm R215, R228	
3	14-5102	4	n		11 11	1K ohm R250, R251, R264, R267	
4		1	n		11	1.2K ohm R258	
5	14-5122	4	**		11' 11	1.8K ohm R237-R240	
6	14-5182	6	- 11		11 11	3.3K ohm R229, R233, R246-R249	
7	14-5332	7.	"		11 11	4.7K ohm R204, R214, R224, R227,	
8	14-5472	1		,		R257, R260, R266	
9	14 5602	2			11 . 11	6.8K ohm R232, R236	
-	14-5682	2	**		11 11	9.1K ohm R252, R269	
10	14-5912	4	99		11 11	10 K ohm R231, R235, R241, R243	
11	14-5103	1	***		11 11	15 K ohm R263	
12	14-5153	3			11 11	18 K ohm R253, R256, R268	
13	14-5183	4			** **	22 K ohm R212, R225, R230, R234	
14	14-5223	4	,,		11 11	24 K ohm R2Q2, R210, R245, R259	
15	14-5243	2		•	11 11	33 K ohm R213, R226	
1.6	14-5333	2					
17	14 5262	1	,,,		11 11	36 K ohm R255,	
18	14-5363	4	,		n n	51 K ohm R216, R218, R220, R222	
19	14-5513	2	"		11 11	56 K ohm R203, R211	
20	14-5563	1	,,		11 11	75 K ohm R254	
21	14-5753	4			11 11	82 K ohm R217, R219, R221, R223	
22	14-5823	4					
23	1						
24							
25	34 5354	1	"		11 11	150K ohm R262	
26	14-5154	5	"		n n	510K ohm R205-R209	
27	14-5514						
28	0017515	2		STP.	10%,	7x2.2K R200, R201	
29	CO17515	1				500K ohm R265	
30	19-411504	1					
31	0014179-12	1	CAP	CER.	AXIAL.	20pf, 5%, NPO C267	
-32	CO14179-13 CO14179-01	1	n n	"	11	22pf " " C264	
33	CO14179-01 CO14179-05	3		**	**	47pf " " C263, C266, C271	
34	CO14179-03	1	"	11		150pf, 20%, X7R, C258	
35	CO14180-04 CO14180-07	2	"	11		470pf, " , C253, C254	
36	CO14180-07	-				*	

	PARTS L	IST SPE	CIFICATION Page 2 of 2
Item	Part Number	Qty.	Description
37	CO14181-01	18	CAP, CER, AXIAL, .001uf, +80-20%, Z5U, C213, C229, C230, C236-248, C257, C276
38	CO14181-02	7	" " .0luf, " " , C215, C225, C233, C255, C265, C272, C273
39	CO14181-03	14	" " .luf " " , C202, C204- C209, C232, C234, C259, C260, C262.
			C268, C274
40	CO10821	2	" POLYSTRENE, 820pf, 5%, C269, C270
41	CO14369	2	" ELEC. RADIAL, 4.7uf, 35V, C256, C261
42	CO17517	1	" " 3300uf, 16V, C231
43	CO16569	1	" TANTALUM, luf, C235
44	CO17516	- 6	" " 10uf, C203, C210, C217, C219, C22 C223
45 .	CO17518	4	" MYLAR DIPPED, .047uf, 5%, C200, C201, C211, C212
46	CO14353	4	" " . " .068uf, " , C249-C252
47	21-101104M	10	" " .luf, ", C214, C216, C218, C220
			C222, C224, C226-C228, C275
48	31-1N914	7	DIODE: 1N914, CR200-CR206
49	31-1N4001	5	" 1N4001, CR207-CR211
50	31 1N4001		intool, chao, chair
51	33-2N390 4	10	TRANSISTOR: 2N3904, Q200-Q209
		5	" 2N3906, Q210-Q214
52	33-2N3906	1 1	1 10
53	34-2N356 3	1	213303, 2213
54	CO14384	4	INDUCTOR: FERRITE BEAD L200, L202, L203, L206
55	CO15752	1	" AXIAL: 1.8uH L205
56		1	" 15uH L201
57	CO10823	1	" 12½ TURN VAR. L204
58	CAO15796	1 1	SOCKET: CATRRIDGE ASSEMBLY J200
59	CO14386-02	6	" I.C.: 14 PIN
60	CO14386-03	2	" 16 PIN
61	CO14386-05	1	" 20 PIN
62.	CO14386-08	1	" 28 PIN
	CO14386-09	2	" 40 PIN
63	CO14386-09		
64	CO16805	1	CRYSTAL: 3.579545MHZ X-200
65	CO14719-09	1	CONNECTOR: 13 PIN J204
66	CO14719-08	2	" 8 PIN MOLEX J205, J206
67	CO10448	2	" RIGHT ANGLE "D" 9 PIN J202, J203
68			
69	CO17263	1	JACK: POWER J201
70			
71			
72	CO12242	1	SWITCH: PCB SLIDE S201
73	CO14397	1	" POWER S200
74			
75	CO14348	1	VOLTAGE REGULATOR A203
76	C016548	1	HEATSINK
77	72-1406S	1	SCREW #4-40x3/8 PHIL. HD.
78	75-044	1	WASHER #4 SPLIT
79	75-914C	1	NUT #4 STD.
80	. 5 5 2 - 5		
81	C016886	1	P.C.B.
01	0010000	_	

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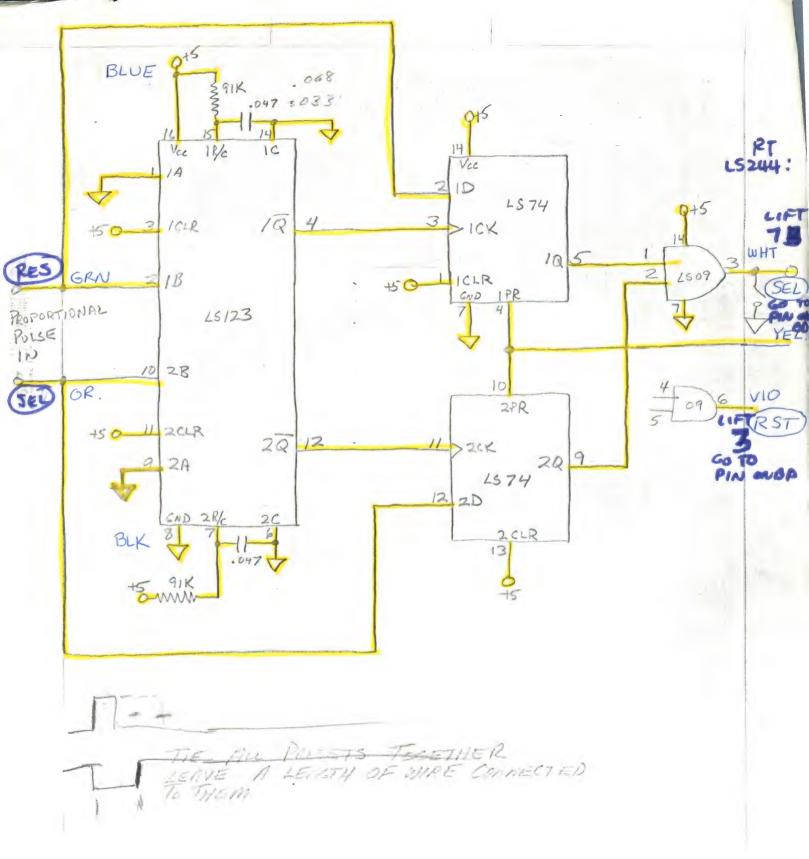
57 58

ITEM PART NUMBER QTY DESCRIPTION

```
RES.,1/4W.,5% 220 OHM R269,270
      14-5221
                        RES., 1/4W., 5% 390 OHM
      14-5391
                     1
                        RES.,1/4W.,5% 470 OHM R223,245
                     2
      14-5471
                        RES.,1/4W.,5% 1.0 KOHM R231,232,233,253
      14-5102
                        RES.,1/4W.,5% 1.8K OHM R207,235,236,237,238
      14-5182
                        RES.,1/4W.,5% 3.3K R217,220,234,242,243
      14-5332
                        RES.,1/4W.,5% 4.7 K OHM R201,208,252,257
      14-5472
                        RES., 1/4W., 5% 6.8 KOHM R221
      14-5682
                     1
                        RES.,1/4W.,5% 9.1 KOHH R205
      14-5912
                     1
                        RES., 1/4W., 5% 10KOHM R203, 213, 214, 218, 224, 240,
      14-5103
                        R258,268
                        RES., 1/4W., 5% 15 KOHM R202, 260
      14-5153
                     2
                        RES.,1/4W.,5% 18K DHM R206
      14-5183
                     1
                        RES., 1/4W., 5% 22 KOHM R215, 229
                     2
      14-5223
                        RES.,1/4W.,5% 24 KOHM R247,251
      14-5243
                     2
                        RES., 1/4W., 5% 27 KOHM R219, 230, 239, 241
                     4
      14-5273
                     5
                        RES.,1/4W.,5% 33 KOHM R256,R271
      14-5333
                        RES.,1/4W.,5% 56 KOHM R216
                     1
      14-5563
                        RES.,1/4W.,5% 75 KOHM R225,228,244,265
                     4
      14-5753
                        RES., 1/4W., 5%, 100KOHM R210, 212, 226, 227, 246
      14-5104
                    11
                        R248,249,262,263,264,267
                        RES., 1/4W., 5% 110 KOHM R222
      14-5114
                     1
                        RES., 1/4W., 5% 150 KOHM R259
      14-5154
                     1
                     4
                        RES.,1/4W.,5% 510 KOHM R204,211,261,272
      14-5514
                        POTENTIOMETER 500K OHM R200
23
      19-411504
                     1
24
                        CAP, MYLAR DIPPED: 1UF, 100V C212, 241, 247, 248
      21-101104M
                     4
                        CAP, CERAMIC, AXIAL: .1 UF, +80-20%, ZSU C200,
25
      C014181-03
                    17
                        C202-205,209,213,234,237,238,243,245,246,249,
                        C250,255,258
                        CAP, CERAMIC, AXIAL: .01 UF, +80-20%, Z5U C201,
      C014181-02
                        0214,215,226,236,256
                        CAP, CERAMIC, AXIAL: .001UF, +80-20%, ZSU C217,
      C014181-01
                    14
                        C218-C223, C251-C254, 257, 260, 261
                        CAP, CERAMIC, AXIAL: 20 PF NPO ACROSS XTAL
      C014179-13
                     1
                        CAP, CERAMIC, AXIAL: 22 PF C242
      CO14179-01
                     1
                        CAP, CERAMIC, AXIAL: 47 PF C210,235,259 1 NPO ACPOSS
                     3
      CO14179-05
                        CAP, CERAMIC, AXIAL: 150 PF C233
      CO14180-04
                     1
                        CAP, CERAMIC, AXIAL: 470 PF C232,233
      C014180-07
                     2
                        CAP, MYL., DIPPED: . 068UF, 100V C228, 229, 230, 231
      C014353
                        CAP, POLYSTYRENE 820 PF C239,240
      C010821
                     2
                        CAP, ELECTROYLTIC: 4.7 UF, 35V C207, C216
      CO14369
                     2
                        CAP, ELECTROYLTIC: 10 UF, 16V C206, 208, 225, 227
      CO14371
                     4
                        CAP, ELECTROLYTIC: 2200 UF,16V
                     1
                        DIODE 1N4001 CR205,206,207,208
      31-1N4001
                     4
                        DIODE: 1N914 CR200,201,202,203,204,209
      31-1N914
                     6
      34-2N3563
                        TRANSISTOR 2N3563
                                            0200
                     1
                        TRANSISTOR 2N3906 Q201,202,203,204
      33-2N3906
                     4
                        INDUCTOR, 1.8 UH L200
      C015752
                     1
      C010823
                        12 1/2 TURN COIL
                                            L201
                     1
      C014384
                     4
                        INDUCTOR, FERRITE BEAD L202-205
```

ITEM PART NUMBER QTY DESCRIPTION

C016010	1	CRYSTAL 3.579545 MHZ. X200
	1	13 PIN RIBBON CABLE CONNECTOR J208
	2	15 PIN RIBBON CABLE CONNECTOR J206,207
CO10448	2	CONNECTOR, RT. ANGLE "D": 9 PIN J202,203
C014715		CONNECTOR POWER JACK J201
C014386-02	5	SOCKET, I.C.: 14 PIN A204, Z200, 201, 202, 203
C014386-03		SOCKET, I.C.: 16 PIN A205, A206
C014386-05		SOCKET, I.C.: 20 PIN - A203, 207
C014386-08	1	SOCKET, I.C.: 28 PIN A200
C014386-09	2	SOCKET, I.C.: 40 PIN A201, 202
C010819		VOLTAGÉ REGULATOR 7805 A209
79-5903	1	CONNECTOR PHONO JACK J204
CA012174	1.	MODULE, RF, "B" A208
CO14397	1	SWITCH POWER S201
C012241	1	PCB SLIDE SWITCH S202
CA015796		CARTRIDGE SOCKET ASS'Y J200
	C010448 C014715 C014386-02 C014386-03 C014386-05 C014386-09 C010819 79-5903 CA012174 C014397 C012241	1 2 2 CO10448 2 CO14715 1 CO14386-02 5 CO14386-05 2 CO14386-08 1 CO14386-09 2 CO10819 1 79-5903 1 CA012174 1 CO14397 1 CO12241 1



ON 13/8"X 4" VECTOR BOMAD

12



ENGINEERING LOG SHEET

GAME OR PROJECT RC STELLA PROTO RUN

UNIT #	FREQ.	MAIN FRAME#	CHANNEL
1	49.740 MHZ		
2	49.760	1	
*3 *4 56	49.780	1	
3	49.800-	4	R
7	49.980		
8	49.960		
9	49,740	2	R
10	49.760	3	R
	49.800		
12	49,980	4 2	L.
14	49.920-	2	_
16	49,940	3	_

WITNESS WRITER DATE DK



GAME OR PROJECT

RC STELLA SHOW UNITS

- 1 R TRANS: 49, 8294 MHZ (CO 16936 XTAL) R TRANS: 49,8294 MHZ (CO 16935 XTAL)
 - L REC: 24.7175 MILE (CO17157 XTML) 400, VIN = . 8 VOT
 - R REC: 24,6875 MHZ (CO17156 XTAL) 735 MV/N= . 8 V OUT
- 2 L TRANS:
 - RITRANS:
 - L REC:
 - R REC:
- 3 L TRANS
 - R TRANS
 - L REC!
 - R PLC

NOT USED FOR

- 4 L TRANS: 49.8724 (rol6936)
 - ETRANS 49.8794 (10116915)
 - LREC: 24,7175 (2017157)
 - REC: 24.6875 (CHITISA)

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- 4				
1	WRITER	DATE	WITNESS	DATE



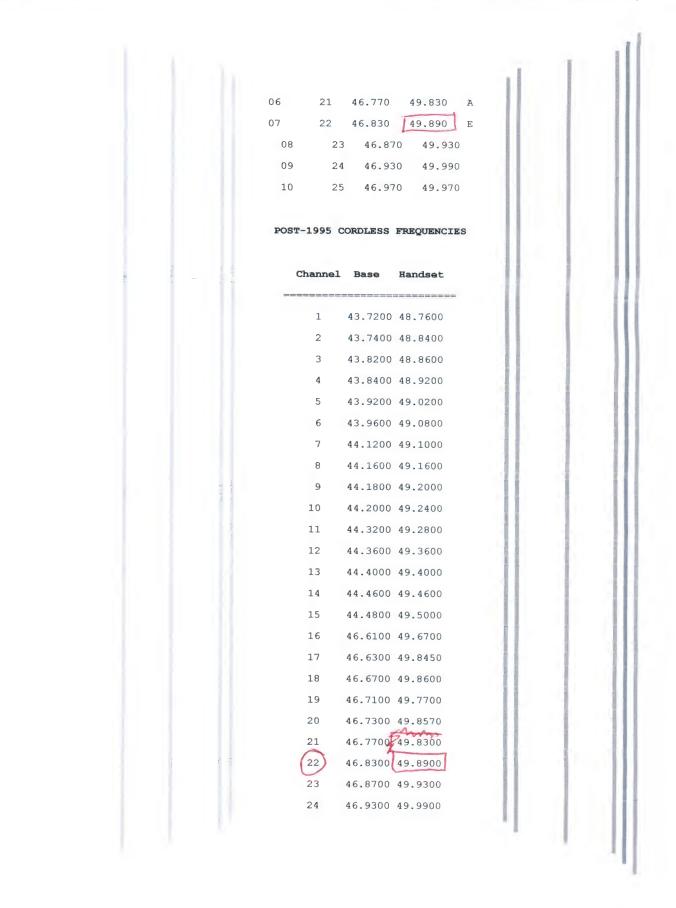
ENGINEERING LOG SHEET

GAME OR PROJECT

RC STELLA SHOW UNITS

CHANNEL ASSIGNMENTS (2 EACH)

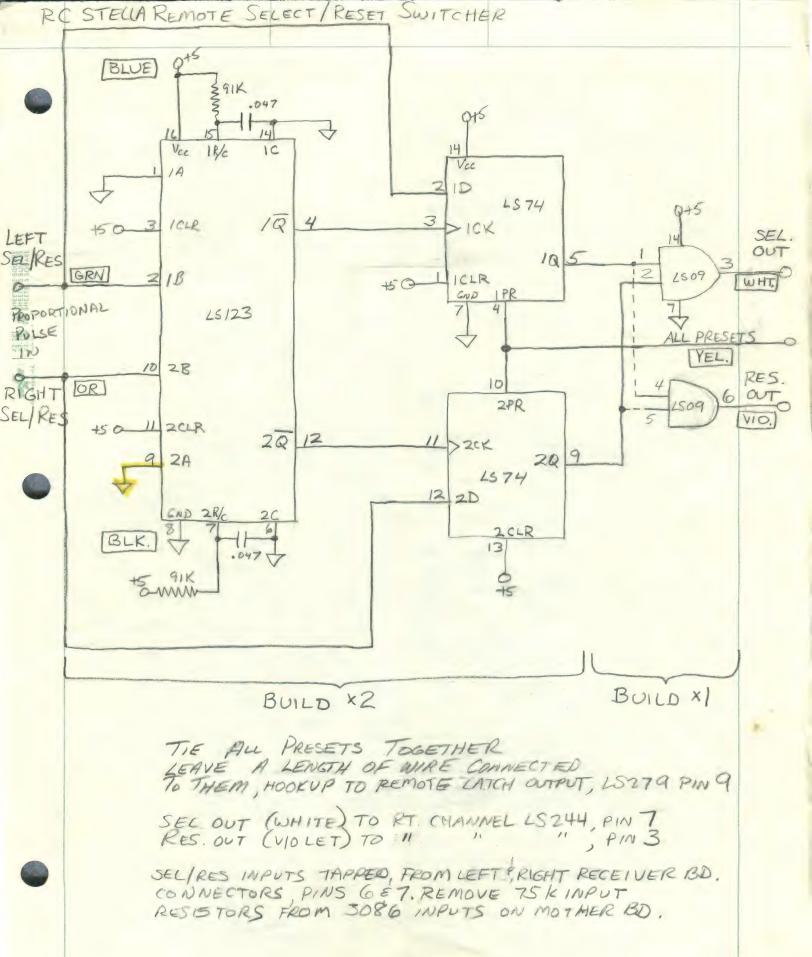
1	LEFT RIGHT	24.6425 24.5725	TRANSMITTER 49.7387 49.5987
(2)	LEFT RIGHT	24.7525	49.9587
3	LEFT RIGHT	24.6525 24.5825	49.7587
4	LEFT RIGHT	24.7325 24.6725	49.9187
The Section 1	LEFT RIGHT	24.7625	49.9787
6	LEFT	24.7425	49.9387



49 Mhz Cordless Phone Frequency Table

This table is the frequency chart for the 49 Mhz cordless phone frequencies. These listings are only for information as it is illegal to monitor, record or disclose the contents of a cellular or cordless telephone conservation! In 1991 and again in late 1995, the FCC added additional frequencies to the 49 Mhz section for these phones, and changed the frequency shift from the base frequency and handset. Hence, for this division of cordless phones, there are three sections, pre 1991, pre and post 1995. In order to test the phone operation via scanner, it is necessary to program the BASE frequency to enable both sides of the conversation. As you can see from the chart, some of the frequencies overlap and can, in certain instances, cause problems for other units. Also be aware that baby monitor channels also fell into the 49 Mhz telephone range and OFTEN cause problems.

	PRE-19	91 CORI	OLESS FR	EQUENC:	ES		
Ch	nannel	## Ba	ase TX	Hands	et TX		
=		=== =		===:			
C	Channel	01A 4	49.9300	01.	5950		
C	Channel	06A	49.8300	01.	7050		
C	Channel	13A	19.8600	01.	7650		
C	Channel	19A	49.8750	01.	7950		
C	Channel	25A	49.8900	01.	3250 [®]		
C	Channel	27A	19.8450	01.	7350		
	PRE-19	95 CORI	OLESS FR	EQUENC:	ES		
						8 8	
Cha	nnel B	ase	Handset	Baby M	onito	-	
					610		
			Handset wencies		610		
0	ld-New	Freq		Cha	610		
01	ld-New	Freq 46.61	uencies	Cha	nnel		
01	16 17	46.61	uencies 0 49.6 30 49.	Cha 570 845	nnel		
01 02 03	16 17 18	46.61 46.63	uencies 	Cha ====== 570 845 1	nnel		





Here is a list of our available oscillator frequencies

We try to carry as many of the following oscillator frequencies as possible. Due to rapidly fluctuating demand, we may not always have them in stock. Parts marked with a * are currently out of stock, so please check with us prior to ordering them to find out about availablity, lead time, and pricing.

- Full Size Metal Can TTL oscillators
- · Half-size Metal-can TTL crystal oscillators
- Surface-Mount (SMT) TTL crystal oscillators (14x9.8)
- Surface-Mount (SMT) TTL crystal oscillators (13x9.7)
- Surface-Mount (SMT) TTL crystal oscillators (12.7x9.5)
- Surface-Mount (SMT) TTL crystal oscillators (12.8x4.9)
- Surface-Mount (SIVIT) TTE Crystal OSSIMACO (HC-18, HC-49/V, HC-49/VA)
 Crystals (NOT oscillators) + 49,89 MHz (HC-18, HC-49/VA)
- Surface-mount (SMT) capacitors
- Surface-mount (SMT) inductors

Full Size Metal Can TTL oscillators

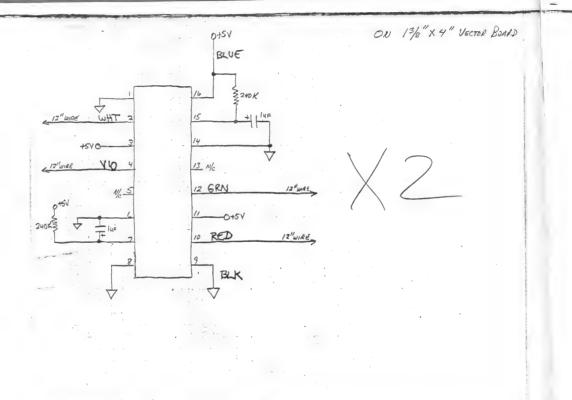
- 0.712 MHz *
- 1 MHz
- 1.024 MHz *
- 1.536 MHz *
- 1.544 MHz *
- 1.792 MHz *
- 1.8432 MHz
- 2 MHz *
- 2.2 MHz *
- 2.4576 MHz *
- 2.666 MHz *
- 3.6864 MHz *

http://www.io.com/~oe/OscFreqs.html

2700 CMS+ALS

C "PLAIN" PCB = "LT TI7" LOWER RTCORNER LEFT ROUR (ROWII, 5 STKR SHIELD) #1 (HOICE COMMANDER XTAL = CO17157 = 24.7175 MHz XZ = [49,4350 MHZ RT RCVR (RCM10,2 STKSHZO) XTAL = CO 17156 = 24.6075 MHZ XZ = 49.3750 MHZ (016935 = 49.8294 MItz (x20) KEYPAP HEADER +UNCTION COLOR LOCAL J04571CK Kenstlerdrongs 269-345-4609 MICHIGAN FRIG-4 (6-1) RED SELECT VID RENOTE BKN PROPLE RESET YEL GNP COM GRN com

1/10/0801 BLANK PCB YTAL: 49,6387 /2=24,81935 MHZ NEEDS ROVE XTAL LI: 43L PCB (STKR) 12 = 24.95935 MHZ #2 (401CE -(50 REVR) WON'T LZ: CO16935 XOOL = 49.8287 /2 = 24.9/435 M/Z 49.7987 /2 = 24.89935 m/ 55ales 24.9000 HC18 FG00 49.375 /2 = 21.6875 (017/56) CO16112=3,54 (01680) 4.43



ASSEN	MBLY TITLE RC STR	LLA P	ROTO RUN P/L	REV.
		IST SPE	CIFICATION Pag	e of
Item	Part Number	Qty.	Description	
/	.001mf	220	CAPACITOR, CERAMIC DISC	25V
2	.005 nf	1110		250,10%
3	15pf	110	IC /C	25V, 5%N.
4	=20f	55	11 10 10	11 //
. 5	270f	110	11 /1 /1	11 /1
6	47pf	165	11 /1	11 11
7	100pf	110	11 CERAMIC AXIAL,	OT NPO
8	.015 uf	110	POLYESTER FILM,	5%
9	.622 uf	110	11	, ,
10	· luf	330	17	
11	.068 uf	770	. 11	
17	.047 uf		et il	
13	1nf	220	" ELECTEOLYTIC RADIAL	16 V
14	3200 uf	55	11 11	Kov
15	2.2 MHy	110	INDUCTOR	
16	2.7 MHY	110	11	
17	3,9 m 14'y	110	И	
18	1 m Hy	220	1/	
19	MP5 2369	110	TRANSISTOR	
20	MPSHID	110	11	
21	7405	110	1. C.	
22	(10005	110	" ENCODER (JOHN HAMILL	
23	C1C006	110	" DECODER (")
24	74LS123	110	()	
25	7465157	55	11	
26	7465779	55	11	
27	4066	55	//	
28	LM 324	55	1)	
201	74LSO1	55	Al .	
30	74LS04	55	- //	
31	741509	35	3/	
32	741574	110	0	
33	180 pf	100	CAPACITOR, CERAMIC DISC, 251	/
34	•			
35				
36		-		
37				

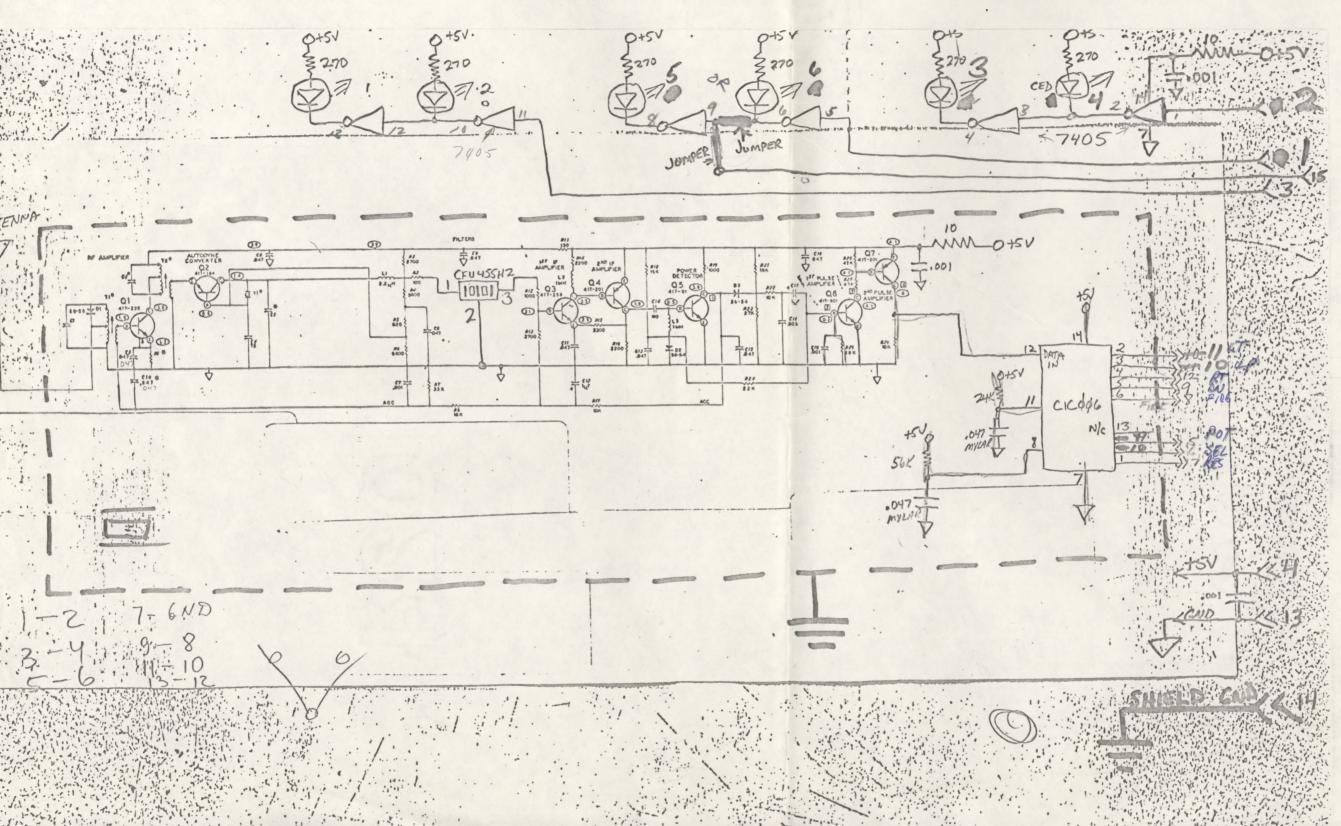
NOSE	MBLY TITLE PC S7			P	/_		REV.
		IST SPECIFICATION Page of					
Item	Part Number	Qty.		Descri	otion		
1	1001 uf	1220	CAPACITO	R, CERAMIC	DISC	25 V	/
2	.005 uf	1110	14	11	1/	The second liverage and the se	10%
3	15pf	1110	10	10	1 (59 N.
4	-20f	155	11	10	1.0	11	11
-5	270f	1110	11	/ \	/(11	/1
6	47 of	16.5	11	/(/1	11	11
7	10000	1110	/1	CERAMIC	AXIAL.	10%	NPO
8	.015 mf	1110	/(POLYESTER	FILM,	5%	
0	.672'uf	110	11	/		, 1	
10	· luf	1330	11	/1		-	
1 1	. 668 , f	270	11	. /1			
13	.041,,f		1 (1 (
13	1,5	1220	1 /	ELECTLOLYT	IC REDIA	11 16	OV
1 4	37001.4	55	/ 1	11	11	11	OU
15	2.2'alty	1110	INDUCTOR				
6	2.7 MHY	1110	17				
17	3.9 mlty	110	//				
18	1 mitis	270	//				
19	MPS 2369	110	TRANSISTA	OR			
20	MPSHID	110	1 /				
21	7405	110	1. C.				
22	(10005	110	/	CEER 1:0	11/1/11/11	LL)	
23	CIC 606	110	" DEC	ODER (",)	
24	74LS123	110	11				
25	741,5157	55	11	•			
26	74L5279	55	• .				
27	4066	55	//				
28.	1/1/224	55	1/				
a	74LSO1	55	11				
20	74LS04	55	11				
31	74609	35	1/				
72	746574	110	//				
3	180 pf	100	CAPACITOR,	CEBAMIC DI	C 25	1	
34							and the same of th
5					and the second s	The second party of the Second	el diser : ; ; gan who art "Albridge ; dis. Type-bellereri diser.
6	Danie ZTDFT = Ruse _ uB _191787				T. M. PORT T. M. LOW AND T. MICHIGAN BANK.	. while to grow or the collection on the confi	words fletter in side wast its, total
=71							

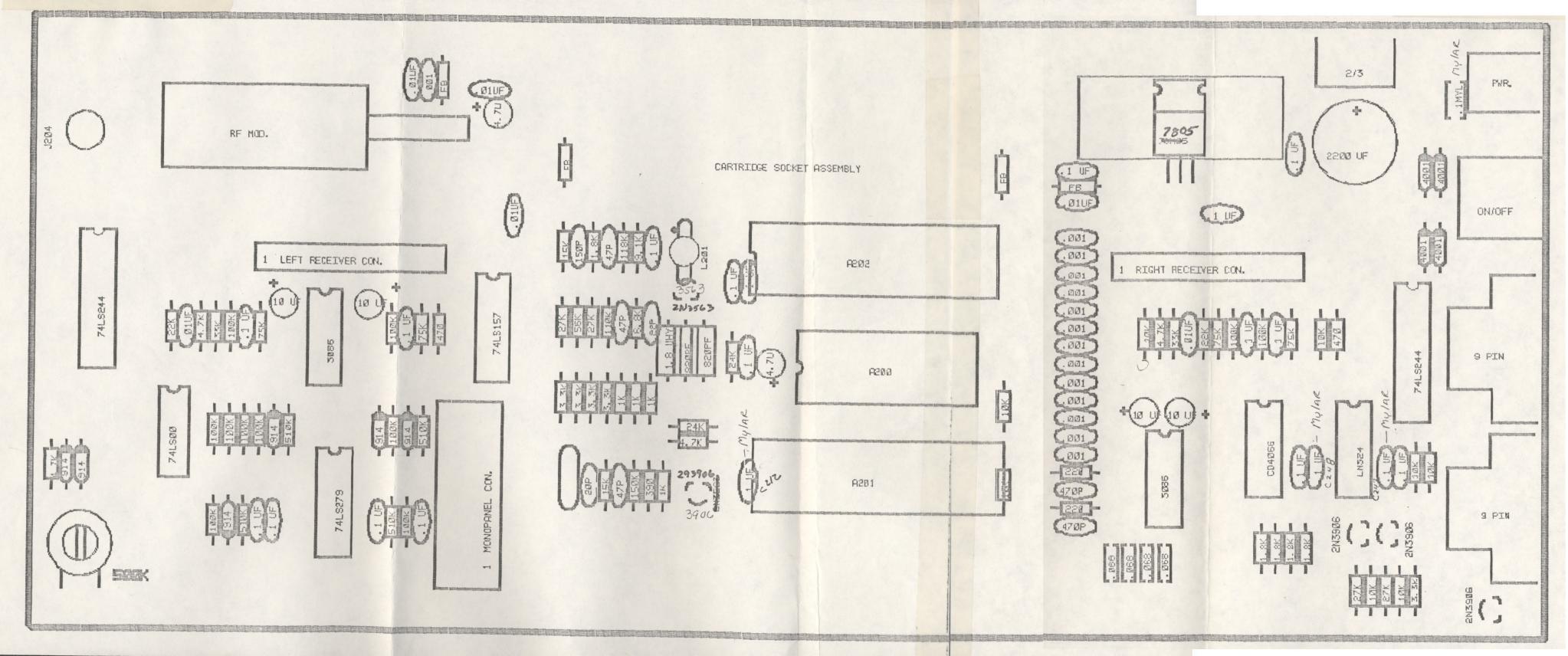
10:45 Mayne -THURS 2/26 Gleed these parts ordered for the RC Stella proto run in addition to what is already in process. Call me for ?'s if Dan Kamer X 5066 QTY 55 / 22 PF, NPO, ±5% (25) 16 QTY 55/47 PF, NPO ±5% 200 78 QTY 110/ 27 PF, NPO + 5% 2016 QTV 55 / 180 PF, NPO ±5% 250 and 1906 01706 125 125 125 125 1 All CERNIC Disc will form

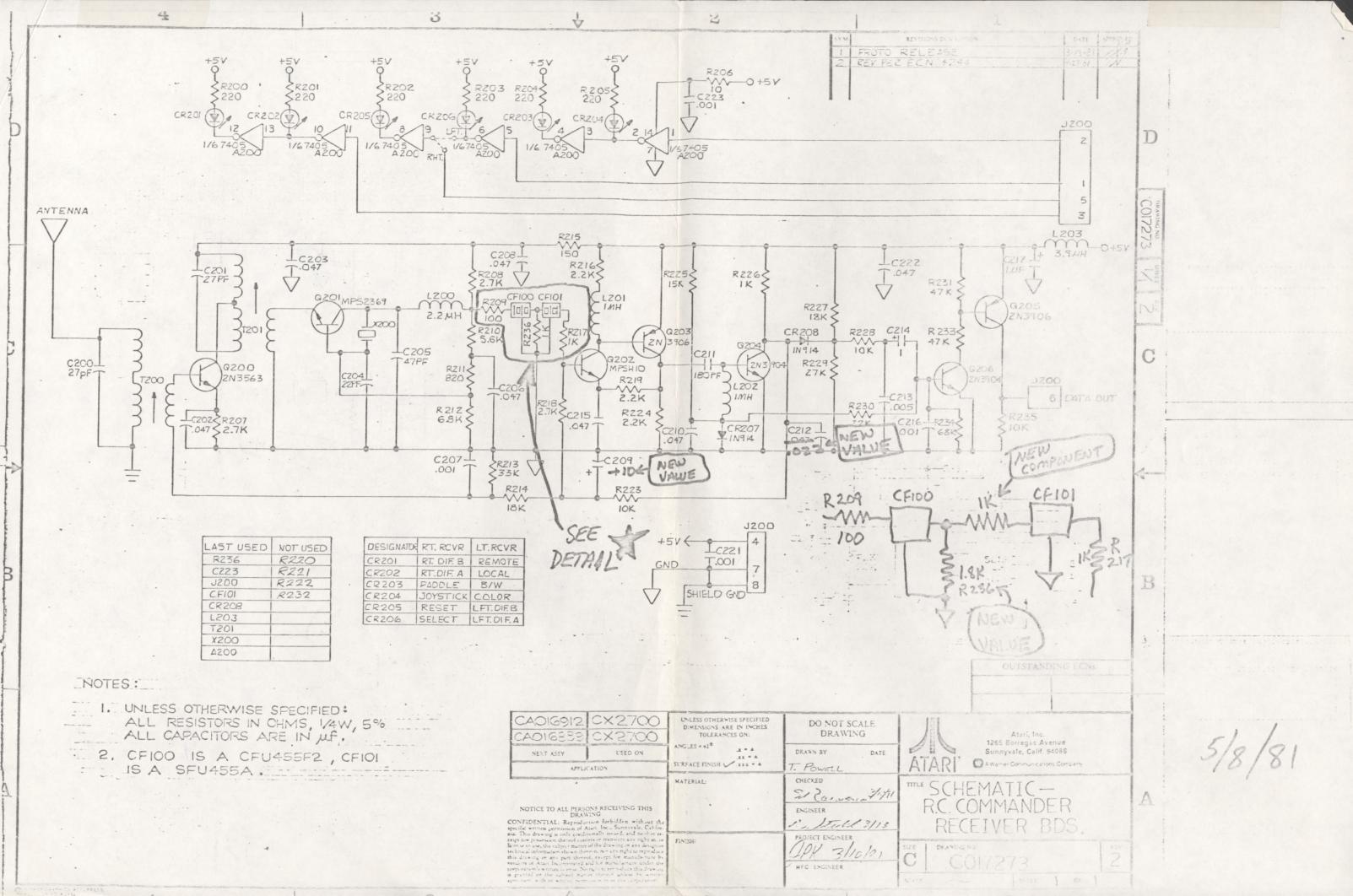
	R.C. PROTO	RUN OF	50,	PARIS	115T REFIECTS 50 + 10%	ONLY
) :	303	503 - 0216 - 311006	1 0-
ITEM#	0 -					QTU
/	CAPACITOR	, CERAMIC,	Disc)	,00/MF Z5U	220
2	II II	1 1/	- '/	1	,005 4F, = 10%	110
3	- 17	1 1	11	r -	47 PF, NPO, =5%	(1/0)
4	//) (0	<i>if</i>		15 PF, NPO, +5%	110
5	CAPACITOR	, CERAMIC,	HXIAI		100 PF, NPO, + 10%	110
6	CAPACITOR	POLYESIER	- 1/19	1	.015UF +5%	110
7	17) - 11	4/		1022 UF = 5 %	110
8	7)	11	- //		, luf	330
9	1/	1			,068UF	220
10	1	1 // / / /	- 0		.0474F	1,265
	CAPACITOR,	FIECIROI	DIIC, M	4DIAT ,	1MF 16V 3200MF 16V	55
12		1	1	1	500 M 76 V	23
/3	INDUCTOR	2 2 1140				110
14	INDUCTOR 1					110
15	1/					110
16	17		m.1	II HE	1101)	220
ΙΦ	1	1 31111119		112		
17	TRANSISTORS,	MPS 2360	9			110
18	11	MPSHIO				110
	'					
20	I.C. 740	25				110
21	I.C. EN	COPER	CIC DOS	- (JOHN HAMILL)	110
22	I.C. DEC	CODER	C1C 006	, (<i>"</i>]	110
23	I.C. 74	115123				110
25	I.C. 74	115279				55
26	I.C. 74	HLS 1577				55
27		066				55
28		M324			X .	55
29		42501				55
30		144504				53
31		141509				55
31	I.C.	742574				110
2	10	- 0	<u></u>	0.11	mo Z	
-	WAYNE -	ON I.C,			CE : MOTOROLA CE : NATIONAL 5.	
		71120			YOU CAN GET	
		/ H/K O	. 4100 / 14	1/0 6	,00 CHIO GE/	

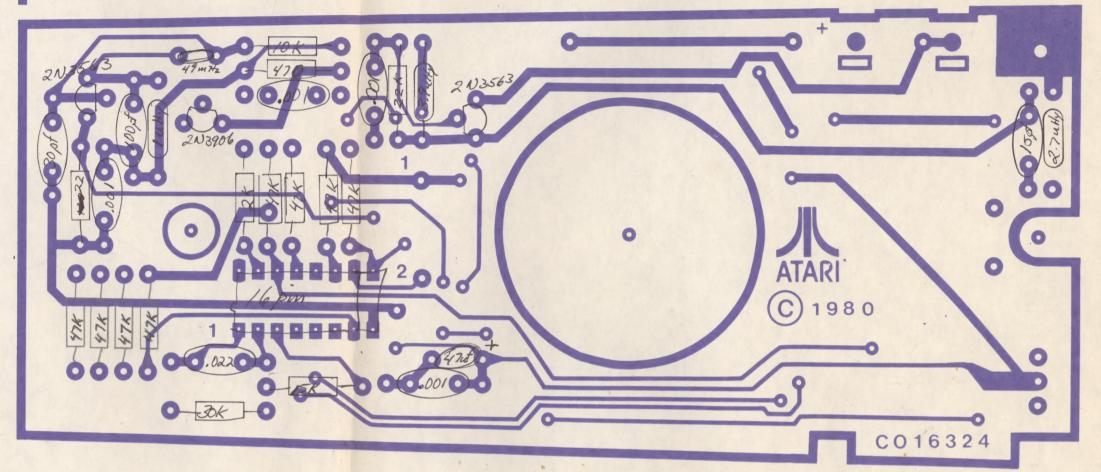
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110 11 11 11 11 F-PIN	EC.
110 " " 8-PIN RIX 100 SERIES MO	W 1/1 - 22
STIGHTER POCER 12 PM RICIO SEPTES PAGE	1100-12
110 " " &-PIN R 55 STRMGHT-UP MOLEY 13-PIN KIZ100 SERIES MO 110 900 8-PIN R	CC.









CIRCUIT SIDE

COMPONENT SIDE

COMPONENT SIDE

ARTIST CHECKED	1265 BOR	CORPORATED REGAS AVE. LE. CA. 94086	
ENGINEER	PRODUCT & TITLE R-C COMMANDER		
PROJECT ENC.	ARTMÁSTER* NO. CO 1	6324	REV.
	SCALE 2:1 SH	HEET OF	